

DAILY METAL REPORTER

MONTHLY SUPPLEMENT

METALS

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ONLY SUPPLY CUT OR DEMAND RISE CAN HALT COPPER PRICE DECLINE

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Vice President, The American Metal Co., Ltd.

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Consolidated Mining & Smelting Co. of Canada, Ltd.

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By L. H. TARRING

London, England

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U. S. METAL IMPORT DUTIES

WASHINGTON REPORT

METAL STATISTICS

**JUNE
1957**

Drive to Windy City on Turnpikes Now Is 13-Hour Breeze



With today's network of high speed turnpikes, Chicago is only 13 hours away for a New York motorist who wants to go west. The turnpike tour from New York to the Windy City is graphically shown above. Follow the dark line, from right to left, and you'll find the key mileage points, the times and the toll costs.

Ellenville Seeking Head for New Bank

Ellenville, N.Y., Dec. 18 (UPI)—Several of the local big banks are seeking a new head for the new bank to be formed here.

Brookville Police Official a Suicide

SEA CLIFF, L.I., Dec. 18.—Gordon Harley, 42, police commissioneer of Brookville, was found dead today.

Highway Building Has Come of Age, Quick Trip Shows

By SHELDON BINY.

The highway builders have caught up with the auto makers. Proof? You can now drive from New York to Chicago without seeing a stop light and without crossing an intersection. You can make the run from city, one to city line in 13 or 14 hours.

The trip really points up how much highway building has changed the transportation scene of the country. In Pennsylvania alone, the new turnpike has taken the same time to travel 180 miles from New York to Pittsburgh—and that's a 100-mile run in the old days. The new turnpike is a 100-mile run in the old days. The new turnpike is a 100-mile run in the old days. The new turnpike is a 100-mile run in the old days.

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While lead is recognized as one of the oldest of metals in the non-ferrous field... its use dating back many centuries... it still holds its own with the "wonder" metals in our rapidly expanding economy due to its inherent properties and imperishable nature.



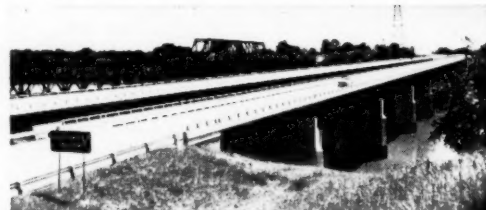
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Two LINE Editorials

Mr. Summerfield says that unless he gets more money he will cut the postal service again July 1. Couldn't he make it July 4, just to emphasize his independence?

Our foreign information program, it appears, is designed to make the residents of the satellite countries discontented with their lot but not to encourage them to do anything about it.

A statistical report in a financial paper features a "break-down of tax sources." Nobody, however, seems concerned over the threatened break-down of the tax payer.

The news from Washington indicates that there has been considerable misguided activity in working on the guided missiles.

A headline says: "Soviet Will Aid India in Search For Oil". And, if they find any oil, guess who will get it.

A magazine advertisement boasts of the development of wax candles that won't smoke. This will be a boon to those not yet able to have coal-oil lamps or the new-fangled gas lights.

BUSINESS IN MOTION

To our Colleagues in American Business . . .

When you drive into a gasoline station and ask the attendant to, "Fill 'er up", you may not be aware of it, but in the storage tank beneath the concrete on which your car is standing there may be an electric motor and pump submerged in the gasoline. There is quite an interesting story about this explosion-proof motor.

The use of the positive displacement type of pumping unit in service station operation has presented vapor-lock problems to pump manufacturers for many years. And with the introduction of even more volatile gasoline, present pumping systems have become inoperative in some applications. The use of a submersible pumping unit in the gasoline storage tank therefore has become not only desirable but virtually a necessity.

In designing the pump motor for this type of unit a leading manufacturer had originally planned on using an aluminum casting for the stator, or outside shell of the motor. But when the design engineers considered the factors that would be encountered, and the symmetry of shape, it appeared that an aluminum extrusion might have advantages over a casting.

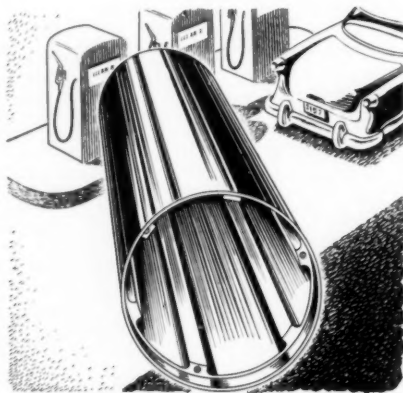
At this point the manufacturer recalled the numerous Revere copper and brass parts they had been using in their motors over the years, with the utmost satisfaction, and how Revere's T.A. (Technical Advisory) Service had often helped them with similar problems. The result was a huddle with a Revere Technical Advisor to discuss the various pros and cons of castings versus extrusions.

It was found that by using extrusions there would be no problem of porosity which is often present in the case of castings. Substantial savings in weight would also be made as the wall thickness of the stator shell could be reduced, and the only machining would be to the ribs on the inside of the tube. With an extrusion no machining of the outside of the tube is required, which would be necessary should a casting be used, while the smoother surface on the inside improves flow

characteristics. This is an important factor in this particular pump motor since the fluid being pumped passes between the stator core and the extruded shell, while in the conventional submersible pump motor a double shell is used. Also, with the smooth surface of an extrusion, less horsepower is used to pump a given volume of fluid. The result was the hollow Revere Aluminum Extrusion you see sketched at left, measuring 13-9/16" long by 3-1/2" O.D.

Here you have still another example of Revere cooperating with the customer in selecting the right metal in the right form to do the best job with the greatest economy . . . be it aluminum, copper or any one of their alloys.

Not only the copper and brass industry but practically every industry you can name is able to cite similar instances. So we suggest that no matter what your suppliers ship you, it would be a good idea to take them into your confidence and see if you cannot make a better product at lower costs by specifying exactly the right materials.



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Washington Report



June 7, 1957

THE ADMINISTRATION finally released its prescription to aid the ailing metal and mining industry but the patient showed no real improvement and it was doubtful that Congress would "fill" the prescription — the long-range minerals program. Some measure of relief was afforded the patient, however, by larger purchases of domestically-produced lead and zinc for the Government's long-term stockpile. Another remedy, resumption of a restricted barter program (exchange of Government-owned surplus farm products for foreign-origin lead and zinc) appeared to be of dubious benefit.

Secretary of Interior Fred Seaton said the Administration's long-range minerals program is designed to stabilize lead prices at about 16.00c a pound and zinc prices at about 13.50c a pound. The program calls for new excise taxes, similar to those that can be applied to copper imports, on imports of lead and zinc with other aspects covering research, exploration, tax laws and subsidies.

Import Tax Plans

The proposed tax rates would be linked to market prices — rising if prices declined and dropping if prices advanced. The two alternate tax plans suggested for lead and zinc imports also apply to their ores and concentrates. Rates under both plans would be based on average prices over a three-month period.

Under the first plan the import tax and the present 1 1/16 cents a pound tariff on lead would be suspended when the price climbed to 17.00c; the tariff alone would apply at a range of 16.00 to 17.00c; a 1.00c import excise tax would be imposed at a 15.00 to 16.00c range, and a tax of 2.00c when the price dips below 15.00c. The alternate plan would remove the tariff entirely and impose a 1.00c tax when the price is at 16.00 to 17.00c; this tax would rise to as much as 3.00c if the price fell below 15.00c.

Basically, the zinc plans are similar to those for lead. Under one proposal both the import tax and the 0.7-cent tariff would be lifted when zinc prices topped 14.50c; the tariff alone would apply if the price dropped to 13.50c and an 0.75 cents a pound tax would be imposed at below 13.50c plus another 0.75c tax at below 12.50c. Under the alternate zinc plan, all tariffs would be removed; a three-step excise tax would be imposed if the price dropped below 14.50c, reaching a high of 2.00c when prices drop below 12.50c a pound.

Immediate response by Congressional leaders to the proposed program was not favorable. Chairman James E. Murray (Dem., Mont.) of the Senate Interior Committee termed the program "an insult to Congress." Sen.

George W. Malone (Rep., Nev.), while describing the program as the first step an Administration has taken in 24 years to equalize what he termed the unfair competition that exists between foreign and domestic producers, expressed doubt as to its ultimate success as an adequate solution for the problem of preserving a sound minerals economy.

Chastises Administration

At the opening of the Senate Interior Committee hearings on the proposed program, and addressing his remarks to Interior Secretary Seaton, Chairman Murray called attention to President Eisenhower's statement of nearly two years ago that the minerals program should not and would not apply to only a segment of the industry. Sen. Murray chastised the Administration for "singling out" lead and zinc for special treatment "when other segments of the mining economy are in equal or greater distress."

Mr. Seaton, replying to Sen. Murray's charges, said other minerals were recommended to receive "special assistance" under the program, but that some of these minerals — beryl, columbium-tantalum and chromite — are in a different category from that of lead and zinc, since their domestic production is almost entirely related to defense programs. He added copper had not been included "in view of the continuing good price and the fact that a 2 cents excise tax comes into effect when the price falls below 24 cents. The current rate of domestic production is expanding, and the market situation is stable at current conditions."

The proposed excise taxes also aroused the ire of four metals-producing countries — Canada, Mexico, Australia and Peru. For all of them the American market is a bread-and-butter matter.

Long-Term Stockpiling

Expanded purchases of domestic

lead and zinc in May for the Government's long-term stockpile, while helpful, were not in themselves deemed sufficient to sustain the markets for these metals at current quotations. The General Services Administration, which does the buying for the Government, is believed to have more than doubled its purchases of lead in May, while it also increased its purchases of zinc about 40 per cent.

Actual purchase figures are treated as restricted information but it is estimated the Government agency bought 5,000 tons of lead in May (2,000 tons in April), and 7,000 tons of zinc (5,000 tons in April).

Resume Barter Program

The Agriculture Department on May 28 announced resumption of its barter program of U. S. surplus farm products for strategic materials from abroad, but with restrictions to exclude deals that might displace sales for dollars. In addition to lead and zinc, the department will consider barter deals for other metals, about the same list as has been in effect recently. The new list also includes copper, bauxite, aluminum, chromite, and palladium.

Lead and zinc producers were practically unanimous in their opinion that the new barter program will be of little assistance in sustaining domestic markets for these metals. Criticisms included: materials delivered under barter contracts may not be produced or processed in the U. S. that immediately rules out the zinc and lead that is produced domestically from foreign concentrates; grain brokerage firms that had figured in previous deals said new requirements would make it practically impossible to conduct swapping operations, that new restrictions would make it necessary for them to make a short sale first of some U. S. surplus farm item and then go hunting for a buyer.

The consensus in metal circles was that there will be little bartering in the next few months and the lead and zinc markets will have to stand on their own feet.

The Agriculture Department reported on June 3 that barter contracts for supplemental type strategic materials signed in April had a total value of \$28,900,000, compared with \$17,800,000 in March, \$1,600,000 in April a year ago and \$104,900,000 for the full fiscal year of 1956. The April contracts included \$20,700,000 worth of zinc, \$2,800,000 of lead and \$5,400,000 of ferromanganese.

Probe Nickel Ratings

More than a score of transactions involving possible misuse of defense priority ratings to acquire nickel are currently being investigated by the compliance staff of the Business and Defense Services Administration, it was announced June 4. BDSA said it had found some companies illegally using a preference rating for procurement of nickel to fill defense orders they did not have.

The Joint Congressional Defense Production Committee also plans to probe "a very large loss" in Government purchases of nickel, according to Chairman Robertson (Dem., Va.).

Mineral Fund Deadlock

The deadlock on funds for mineral purchases, at this writing, remained (Continued on Page 16)

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DECLINING COPPER PRICES CAN BE ARRESTED ONLY BY REDUCTION IN SUPPLY OR INCREASE IN DEMAND

Large Low-Cost Mine Producers Should Consider Accumulating Refined Metal Now and Offer It for Sale When Requirements Exceed Production

By JEAN VUILLEQUEZ, Vice President, The American Metal Company, Limited

TWO years ago you were kind enough to offer me the honor of addressing you. At that time our customers, and yours, were complaining about the insufficient supply of copper. The producer's price here was 38c and the London Metal Exchange price for spot copper was 41c. I indicated then that to sell copper in the United States at prices substantially lower than foreign prices was just as dangerous as to quote substantially higher prices. In the first case, copper needed by United States consumers is diverted abroad, and in the second the importation of fabricated products into the United States is encouraged. That statement still goes.

The corrective to the rising prices was additional production and reduction in demand due to inflated prices. The falling prices can be arrested only by reduced supply or increased demand. By reduced supply I do not mean only a reduction in production, I also mean a decrease of the copper offered for sale both here and abroad.

Supply-Demand Pricing

Production costs of copper, whether you take the top third, or fifth, or tenth layer in the United States or abroad, or the average, or any bottom layers, are not an accurate guide to what copper prices may be at any given time. The copper price will fluctuate depending upon supply and demand.

I am still convinced that the method of pricing copper and copper products on the basis of the London Metal Exchange is a dangerous anachronism.

Producers of copper cannot afford the luxury of pricing methods which deprive them of their proper influence on copper prices and which encourage the use of other materials. However, it has always been my view, and it still is, that the London Metal Exchange performs a very useful function. It is the best barometer of the copper climate that has yet been devised. It is my hope and belief that the New York Commodity Exchange will become more active and, in time, a barometer as important and useful as London.

Two Basic Quotations

For our internal use I had prepared a chart comparing 11 copper prices over the last few years. They are prices on the basis of which copper is bought and sold here and abroad and incidentally at which my company transacted business. As a matter of fact, there



JEAN VUILLEQUEZ

are more than 11 copper prices on the basis of which copper is traded. However, there are really only two basic prices. All other prices are a reflection or a combination of the two basic prices. These two basic prices are the prices quoted by United States producers and the price for spot copper of the London Metal Exchange. Of course these two prices influence each other.

Technical Differences

I have frequently been asked when these two prices would meet and stay together. The fact is that they never will be together for any length of time. There are many technical differences between them. The outstanding difference is that the United States producers' prices represent the price at which they are sellers of copper whereas the London Metal Exchange price fluctuates in accordance with supply and demand in that market. In a very real sense London Metal Exchange may be compared to our stock market.

A chart of these two prices will show clearly the volatility of the London Metal Exchange price and the relative rigidity of the prices of United States producers. Our last annual report included such a chart for the three-year period ending with 1956.

The idea that these two basic prices can or should be the same is as fallacious as the ancient bromide that the combined prices of lead and zinc should equal the price of copper.

As you know, for a long period of time the London Metal Exchange price

was substantially higher than the prices of United States producers; it has been lower since March 1956. It is a good question how long this state of affairs will continue. To answer it would be to predict how long the present oversupply of copper will continue. I am allergic to predictions.

Custom Smelter Price

We sell substantial quantities of copper as agents for many mine producers and as custom smelters. I have heard the opinion expressed that custom smelters should be able to maintain more stable prices. Some people appear to think that the copper which goes to custom smelters is so small—about 10 per cent of the total production of refined copper—that it should be possible to prevent this relatively minor quantity of copper from influencing the price for the remaining 90 per cent.

The copper producing industry's main statistical organization is the Copper Institute. Last year the crude production reported by Copper Institute from all sources reporting to it was about 3 million tons. Of these 3 million tons about 165,000 tons represented primary custom smelter copper and about 150,000 tons came from scrap. The Copper Institute's reports are not all inclusive.

Copper Refined From Scrap

There are perhaps another 700,000 tons of refined copper produced by companies which do not report to Copper Institute, excluding Iron Curtain countries. The refined copper produced from scrap represents only a small fraction of the generation of scrap. We estimate that in addition to the 150,000 tons I just mentioned, 1,250,000 tons of copper in scrap entered the copper market during 1956. This very large tonnage was purchased chiefly by brass mills, secondary smelters, and foundries, although some of it went to primary refineries which do not report to Copper Institute.

Our estimate of the copper consumption last year in the free world is about 4¼ million tons of which about 30 per cent or 1,400,000 tons came from scrap.

Late in the 19th Century a French syndicate tried to control the copper prices; copper scrap broke its back. I think the generalization is correct that copper scrap will always find a market. Any necessary adjustments of supply must come from mine production.

Fluctuation

Producers of copper, custom smelters, or the London Metal Exchange, are sometimes criticized for the fluctuation.

(Continued on Page 16)

Address at 35th annual meeting, Copper & Brass Research Association, Hot Springs, Va., May 15, 1957.

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RESEARCH NECESSARY TO INCREASE USE OF LEAD, ZINC TO BALANCE CURRENT, FUTURE PRODUCTION

Consumption Rate of Both Metals in Europe and Elsewhere Climbing Faster Than in U.S.; Trend Expected to Continue as Living Standards Rise Abroad

By R. HENDRICKS, Consolidated Mining & Smelting Co. of Canada, Ltd.

SINCE the end of World War II, world consumption of both lead and zinc has fluctuated up and down in rhythm with increased and decreased business activity and varying degrees of international tension, but on average the consumption of both metals, both on this continent and abroad, has increased significantly. Because of a number of factors, the most important of which were the United States Steel strike and the Suez and Middle East Crisis, 1956 was a year when world consumption of both new lead and new zinc declined modestly from the record level of the preceding year. However, it still remained at a good level as measured by recent standards.

During the ten year period beginning 1957, some very interesting developments in the world consumption of these two metals have taken place. Some of these developments were obvious and could be predicted with reasonable certainty, others were not quite so obvious, but now that they are known may be useful as indicators of future trends.

In order to show trends, I have appended statistics showing the world consumption of new pig lead and slab zinc for various periods, and also figures showing the consumption of lead and zinc by various industries in the United States and in the United Kingdom.

Prewar Pattern

Prior to the last war, the United States consumed about 27 per cent of the world's lead and 33 per cent of the zinc. Immediately after the war, due largely to the tremendous damage done to European industry, the American consumption of lead and zinc increased to about 44 per cent and 42 per cent respectively of the world consumption of these two metals. During the past decade, with the recovery of European industry and increasing consumption in other parts of the world, this trend has been reversing so that in recent years this country has consumed about 37 per cent and 38 per cent respectively of the lead and zinc used throughout the world.

The swing of consumption away

The address by the author, who is vice president in charge of sales for his firm, was delivered at joint session of American Zinc Institute and Lead Industries Association, Chicago, Ill., April 25, 1957.

from this continent towards a prewar pattern is further illustrated by the rate at which consumption of lead and zinc has been increasing in various areas during the last ten years. During the period 1947 to 1956 world consumption of new lead increased at an average rate of about 4.4 per cent per year. In the United States this annual average increase was only about 1.6 per cent as compared to a rate of about 5.9 per cent for Free Europe. Similarly for slab zinc, while the average annual increase for the world was about 5 per cent, that in the United States was only 3.2 per cent compared to 4.3 per cent in Free Europe and even greater rates in Rus-

sia and other areas throughout the world. A rate of increase for lead and zinc in Europe and elsewhere, faster than has taken place in the United States is one of the more obvious trends which could have been anticipated and which may be expected to continue with rising living standards in Europe and elsewhere.

Substitute

Lead and zinc are in one sense old metals, that is, metals which have been used in some applications for a great number of years. In another sense they are new metals. The newer forms and very high purities in which they are now available are resulting in new applications. However, in spite

WORLD

Consumption of New Pig Lead

(tons of 2,000 lbs.)

	Avg. Year 1935-37	% of Total	Avg. Year 1947-49	% of Total	Avg. Year 1953-55	% of Total
United States	476,600	27.3	689,467	44.4	785,867	37.2
No. America (Incl. U.S.A.)	499,867	28.6	756,967	46.7	866,833	41.1
Europe	963,633	55.2	552,067	35.5	810,700	38.4
Other	262,399	16.2	244,533	15.8	433,067	20.5
Total	1,745,859	100.0	1,553,567	100.0	2,110,600	100.0

Consumption of Slab Zinc

	Avg. Year 1935-37	% of Total	Avg. Year 1947-49	% of Total	Avg. Year 1953-55	% of Total
United States	555,033	33.4	771,967	41.6	995,400	38.1
No. America (Incl. U.S.A.)	572,366	34.5	825,100	44.4	1,061,567	40.6
Europe	850,233	51.6	653,367	35.2	882,067	33.8
Other	231,291	13.9	378,533	20.4	669,033	25.6
Total	1,661,890	100.0	1,857,000	100.0	2,612,667	100.0

Source: 1935-37 Metal Statistics and American Bureau of Metal Statistics.
1947-55 American Bureau of Metal Statistics.

of any new applications which have been developed, both lead and zinc in recent years have been subjected to competition from a number of substitute materials, and in some instances have lost ground to these materials. In some cases, this substitution has been on the basis of price only and this is unfortunate. In other cases substitution has been on the basis of technological advances, developed oftentimes by the producer of the substitute material. This is inevitable, and too, would be unfortunate unless the industry takes advantage of modern science to develop new uses for these metals.

In the United States, during the past 10 years, consumption of new lead or for that matter total lead, including secondary, has not kept pace with the increase in population. During the same period, the rate of increase in consumption of most other basic materials has at least kept pace with or exceeded the rate of population growth.

For many years, the principal uses for lead on this continent were for storage batteries, for lead alloys, and for cable covering. In recent years consumption of lead for tetraethyl fluid has increased at such a rate that it now exceeds lead for cable.

Battery Use

During the ten year period we are considering, the use of lead for batteries has remained about constant and represents a good relatively steady market for some 350,000 tons of lead per year. However, upon closer examination we find that lead consumption in this case has lost out to technological advancements on two counts. During the first few years of the decade the pounds of lead used per battery remained quite steady at about 26 pounds. Then starting about 1951, the statistics indicate that by 1955/56 technological improvements made it possible to reduce the average weight

of lead per battery to about 20 to 21 pounds. Secondly, the battery manufacturers are now able to make batteries with substantially longer life than formerly. All of this has resulted in a situation where, although the replacement market representing the bulk of the battery business depends on the total number of cars in use rather than the number of cars produced in any given year, the production of batteries has not increased proportionately to the 73 per cent increase in car registrations since 1947. As the transition to twelve volt batteries becomes more complete we can probably expect an increase in the average amount of lead per battery, but this average will probably not reach the twenty-six pounds mentioned previously.

Cable Covering

The use of lead for cable covering last year showed a gain over the previous year but this we believe if taken to indicate a trend, may be misleading. The use of lead as a cable sheathing material has not kept pace with the growth in the Industrial Production Index or with the production of cable. From a rather detailed study of this application, which we have made, we have come to the conclusion that, in the long term, except for particular applications, the use of lead in the communication field is declining, and is being replaced by combination coverings such as Stalpath or by plain polyethylene covering for applications where service conditions are not too severe. In the field of power cable the picture is somewhat brighter. The use of sheathed power cable is definitely increasing and for many applications the only satisfactory covering is a metal sheath. At the moment lead appears to be the preferred metal.

The consumption of lead for tetraethyl lead fluid has exhibited the most spectacular growth of any of the

uses. In every year of the past decade the consumption in the United States has increased so that in 1956 the estimated consumption was almost three times that in 1947. This growth in the United States has come about despite the construction of plants in Canada and in the United Kingdom, to meet requirements formerly filled from American production.

Other miscellaneous uses for lead in the United States, although relatively small in themselves, collectively are important, representing about 45 per cent of the total. These uses have not exhibited any spectacular increases or decreases in quantity of lead consumed.

U. K. Lead Use

The pattern of lead consumption in the United Kingdom differs substantially from that of this Continent. In that country cable sheathing, sheet and pipe, and batteries in that order are the most important uses which collectively accounted for about 67 per cent of the total in recent years. About the same amount of lead is consumed for cable sheathing as is consumed by this use in the United States. However, this does not represent home requirements as the United Kingdom is a large exporter of lead covered cable, some of which comes to this country. The cable industry in the United Kingdom, which is efficient and possesses a great deal of know how for the production of specialty cables, is well aware of the threat of substitution of plastics and other materials and is working in close cooperation with research associations to produce better alloys or better techniques for the application of lead sheaths in order to remain competitive. However, even if we assume that the world consumption of lead for cable sheathing remains at about current levels, it is probable that consumption for this use will decline in

UNITED STATES

Consumption of Total Lead by Industries

(tons of 2,000 lbs.)

	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956(1)
Storage Batteries	380,000	373,300	280,600	406,800	353,800	330,000	356,500	337,200	375,000	366,131
Lead Alloys	168,300	183,200	130,600	187,900	156,700	146,100	158,800	168,600	199,300	221,738
Tetraethyl	66,500	83,800	101,700	111,100	127,500	148,000	158,300	160,700	165,100	151,990
Cable	158,700	184,300	130,100	136,800	136,900	146,200	151,500	127,500	121,100	133,924
Pigments	120,600	93,300	69,200	109,900	104,400	86,100	85,200	95,300	106,800	115,225
Lead Products	116,500	101,000	82,000	121,700	104,500	103,100	99,500	102,700	118,000	116,936
Miscellaneous	161,300	110,100	73,800	135,800	157,200	141,500	141,200	102,500	120,400	44,054
Total	1,172,000	1,129,000	868,000	1,211,000	1,151,000	1,101,000	1,151,000	1,094,500	1,205,700	1,190,000

Consumption of Slab Zinc by Industries

	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956(1)
Galvanizing	361,327	370,969	350,880	441,686	400,279	377,688	406,988	403,463	451,141	421,218
Zinc Base Alloys	214,469	234,628	202,181	289,527	255,434	236,689	307,445	290,846	430,807	352,451
Brass	112,347	109,140	85,334	139,373	143,292	155,608	178,182	108,268	146,243	122,395
Rollad Zinc	70,680	76,672	55,200	68,444	64,085	51,318	54,649	47,486	51,589	45,382
Other	27,537	26,326	18,046	28,104	29,881	31,480	38,663	34,236	40,032	36,251
Total	786,360	817,735	711,841	967,134	933,971	852,783	985,927	884,299	1,119,812	977,697

(1) Preliminary U.S.B.M.

Source: American Bureau of Metal Statistics.

the United Kingdom as production facilities increase in those countries which are presently importing cable from that source.

Consumption of lead for sheet and pipe, while still the second largest application in Britain, is estimated to be about 50 per cent of prewar consumption, in spite of a very great increase in domestic and industrial building in the post war period. Since the war consumption of lead for sheet and pipe has remained fairly constant. Therefore the outlook for these applications is not bright and will require constant attention by promotion and research if further ground is not to be lost.

The third most important use of lead in Britain, storage batteries, is small by American standards because of the much smaller number of cars, trucks and buses in operation. In some special applications such as heavy trucks and buses, the nickel cadmium battery has replaced the lead battery in Britain and on the Continent. However, this competition is not considered to be serious.

Use as Shielding

In Britain, because of the high cost of coal and the imperative need for cheap power, it is certain that the production of power from nuclear sources will develop rapidly, and as a result we would expect an interesting increase in consumption of lead for shielding.

Taken all in all it seems that lead, both on this Continent and in Europe, has made the least progress of all the major non-ferrous metals in the post-war period. On the other hand it seems that the development of new sources of lead throughout the world have been also the least of all the major non-ferrous metals. However, we

think that the situation is not one which producers of lead can afford to view with complacency.

Zinc Picture Brighter

Turning now to zinc consumption we find a somewhat brighter picture. Overall consumption of zinc in this country has more than kept pace with the growth of population so that per capita use is on the average a little better than a pound per person per year more than it was ten years ago. This is largely due to the increased use for zinc for galvanizing and for die-casting. These two principal uses together account for 75 per cent to 80 per cent of the total.

In galvanizing, the continuous galvanizing of strip is a development which although known and applied prior to the war, did not reach prominence until the last decade. In 1947 there were less than a dozen lines for continuous galvanizing in operation in the United States. By the end of 1956 there were 34 lines in operation and 5 additional lines contemplated or under construction. Because of the tightly adhering, ductile zinc coating, the product of these lines lends itself to many applications where hot-dipped sheet was unsuitable. This has contributed greatly to the use of zinc for galvanizing, despite an appreciable reduction in the pounds of zinc required per ton of product from that required for hot-dipped sheets. The estimated consumption last year for all galvanizing was only about 3.8 per cent below the previous year as compared to a decline of about 18 per cent for die-casting. In fact the zinc consumed for sheet galvanizing, the bulk of which is now produced on continuous lines, was almost the same in 1956 as it was in the record year of 1955 in spite of the steel strike last year.

The American Die Casting Institute has recently issued a report for the year 1956 which reveals some very interesting information. If you have not read this report I would like to suggest that you do so for I can only touch on some highlights here.

Die Casting Needs

Requirements of zinc for die casting in 1956, although some 50,000 tons less than in the exceptional year 1955, were still about 100,000 tons greater than in the next highest year in the 1947-56 period, and 72 per cent above that in 1947. It was, therefore, a good year for zinc in die castings. However, we find that in 1956 aluminum consumption for die casting was some 4.3 per cent greater than in 1955 and was more than 300 per cent greater than in 1947. All this gain in aluminum has not been made at the expense of zinc. However, we know that in many applications in the automotive and other fields zinc base die castings are facing stiff competition from substitute materials. Despite this continued competition from aluminum, stainless steel, plastics and other materials, the average pounds of zinc used per car increased from 68.7 in 1955 to 71.3 in 1956 and is estimated at 77 pounds in the current year's production. It is our belief that the stability of price which was maintained last year and the adequate supply were major factors contributing to this growth.

Competitive Materials

In recent years, technological advancements have produced a variety of relatively cheap materials, which are sold at a relatively stable price and with which zinc must compete in

(Continued on Page 19)

UNITED KINGDOM

Consumption of Total Lead by Industries

(tons of 2,000 lbs.)

	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956
Storage Batteries	50,380	51,458	52,137	57,314	69,141	53,481	58,057	65,171	68,060	59,311
Lead Alloys	30,992	33,361	31,300	42,570	43,521	32,982	34,997	41,974	43,783	45,046
Tetraethyl	(2)	5,264	5,692	6,007	5,991	6,853	8,093	17,056	24,382	23,687
Cable	106,673	129,537	135,952	96,503	102,674	121,718	102,022	96,124	122,181	123,421
Pigments	56,608	52,150	45,807	56,325	61,081	29,858	39,756	43,888	44,472	39,967
Lead Products	96,261	93,610	78,068	89,686	81,151	73,532	69,786	90,756	97,667	91,515
Miscellaneous (1)	14,314	16,126	18,007	19,094	18,546	10,288	11,452	15,224	14,744	13,727
Total	355,308	381,506	367,563	367,499	382,105	328,712	340,203	376,193	415,289	356,674

(1) Includes some lead used in lead products 1947 - 1951 incl.

(2) Included in Miscellaneous uses.

Source: British Bureau of Non-Ferrous Metal Statistics.

Consumption of Total Slab Zinc by Industries

	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956
Galvanizing	80,519	89,393	94,039	105,932	65,915	73,760	95,675	111,838	113,129	110,568
Zinc Base Alloys	43,048	30,109	27,749	36,003	34,737	25,034	27,969	39,406	46,425	39,842
Brass	65,614	60,482	45,755	57,132	57,576	60,117	47,989	69,256	74,987	60,046
Rolled Zinc	29,232	30,294	27,581	30,756	22,652	18,740	24,676	24,526	25,070	25,572
Other	31,584	39,744	27,426	35,499	29,678	13,740	17,915	24,179	21,900	17,576
Total	249,997	250,022	222,550	265,322	210,758	191,391	216,225	269,205	281,512	253,606

Source: British Bureau of Non-Ferrous Metal Statistics.

LONDON COPPER MARKET SHOWS LITTLE REACTION TO RHODESIAN PRICE AGREEMENT AND RST OUTPUT CUT

Stability in Tin Attributed to Buying for Buffer Stock; Lead, Zinc Declines Reflect Proposed U. S. Duty Rise, Restricted Barter Program

June 6, 1957

THE COPPER MARKET here during the past month has certainly remained uneventful, but the general picture has been one of a further decline in prices. All indications continue to point to the fact that European consumers, generally speaking, are pretty fully covered as regards their current requirements by period contracts and in some cases they have even been re-selling a limited amount of metal.

With the market in its recent state, there has naturally been little incentive for users to rebuild their stocks, which, in most cases are believed to be standing at a relatively low level. During May, and particularly in the early part, the London market saw some quite substantial support buying on behalf of the Rhodesian producers from time to time, and over a period, such purchases are estimated by dealers here to have totalled between 10,000 and 12,000 tons.

The big question exercising the minds of most operators now, therefore, is whether all this metal will be taken up by the interests concerned, or whether some, at least, of it will be re-sold. It seems pretty certain that a good deal of it will be taken up so that as far as market operations are concerned, for the time being the substantial rise in stocks in London Metal Exchange warehouses must be regarded as having been more apparent than real. During May, Metal Exchange warehouse stocks nearly doubled from 4,372 tons at the end of April to 8,222 tons.

Rhodesian Price Pact

At the end of May, it was announced that after somewhat lengthy discussions, the two big Rhodesian producing groups had reached agreement on a pricing policy for their U.K. customers, which would provide less frequent price changes than the daily variations on the Metal Exchange. Details of the policy have not been released so that no opinion can yet be given as to the merits or otherwise of the plan proposed. It is now up to the consumers here to decide whether this new proposal is acceptable. Present indications are that no hurried decision is likely to be made, and that some little time will elapse before the consumers' reaction to it is made known.

It is believed that the users here are anxious to see some system which would provide the best of both worlds, by enabling them to quote firm prices for a reasonable length of time to the buyers of their semi-finished products, but which would, at the same time, over a period, enable them to obtain their raw copper at an average figure not very

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different from the average Metal Exchange quotations.

In market circles a certain amount of scepticism is being expressed as to the problem of devising an operable scheme of such a nature, but obviously until a good deal more is known about the producers' proposals — which are admitted to be complex as regards their relationship with the Metal Exchange price — no worthwhile opinions can be expressed on the subject.

RST Cuts Output

Hard on the heels of this news came the announcement that the Rhodesian Selection Trust group is to cut back its production from the Roan Antelope and Mufulira mines by ten per cent from June 1, representing a reduction in output of about 18,000 tons a year. This is being done with the admitted intention of endeavoring to try and prevent prices going too low, but there was little market reaction to the news; the general view here being the same as that which has been expressed in America, namely that the total curtailment in output so far announced by American producers and the RST group is insufficient to bring output down to the current level of world industrial requirements.

This opinion is fortified to some extent, by the indication of Chilean policy, which is that production will certainly not be decreased and may even be increased. According to some reports, the Chilean Government is budgeting on a certain revenue from

copper sales, and to obtain it at declining prices, a larger output would be necessary.

Whilst in the short-term, the copper outlook cannot be regarded with much enthusiasm, there is no despondency about the long-term outlook for the metal, and indeed, the RST group announces that its current curtailment of production is in no way affecting its long-term expansion plans, particularly those at Mufulira West and Chambishi.

Tin Market Stable

By contrast to the other metals dealt in on the London Metal Exchange, the tin market has worn an air of stability during the past month. In view of the fact that American consumers have continued to show very little interest in recent weeks, and stocks in official Metal Exchange Warehouses were more than doubled during May, there is a growing belief that the stability of the market owes something, at least, to Buffer Stock buying. This view is also encouraged by the fact that despite the increase in warehouse stocks, a backwardation persists in prices, suggesting that all the metal in the warehouses is not readily available to the market.

Consuming demand in Europe generally, has been on a fair scale, and considering the favorable level of operations in the U.S. tinplate industry, surprise has been expressed at the low level of American buying interest.

The question of supplies of Russian tin continues to attract a good deal of interest over here, as some recent indications have suggested that the Soviet may be an exporter of something like 1,000 tons of tin a month. Whilst Russia was shipping some tin abroad in the latter months

U. K. COPPER STATISTICS

The British Bureau of Non-Ferrous Metal Statistics reports that at the end of March, U. K. stocks of blister copper were 11,235 tons against 15,007 tons a month earlier, and those of refined copper 50,544 (47,113 tons). Of the refined stocks, consumers held 31,616 tons (31,503 tons). U. K. output in March was 10,403 tons of primary refined and 7,884 tons of secondary refined. There was also an output of 706 tons of rough copper. Consumption in March was lower at 53,432 tons, compared with 56,040 tons in February and 61,588 tons in January, but for the first three months of the year, was only marginally less than in the corresponding period of 1956, as is shown by the following figures.

PRODUCT	GROSS OUTPUT—		
	Mar. 1957	Jan.-Mar. 1956	Mar. 1957
Unalloyed Copper Products			
Wire (1)	21,789	64,739	73,720
Rods, Bars & Sections	1,527	5,193	4,590
Sheet, Strip & Plate	5,056	15,691	15,361
Tubes	4,515	13,110	14,121
Castings & misc.	650	1,950	1,950
Alloyed Copper Products			

Wire	1,529	5,120	4,492
Rods, Bars & Sections	9,682	37,172	30,429
Sheet, Strip & Plate	7,507	33,764	24,081
Tubes	2,165	6,001	5,779
Castings & misc.	6,511	20,284	20,036
Copper Sulphate	4,482	13,768	13,110

Total for all products, 65,413 216,792 207,669

Copper content of Output	53,432	173,673	171,060
Consumption of Refined Copper (2)	42,787	130,523	137,231
Consumption of Copper & Alloy Scrap (3) (Copper content)	10,645	43,150	33,829

Notes:

(1) Consumption of H. C. Copper and Cadmium Copper Wire Rods for Wire and Production of Wire Rods for Export.

(2) Virgin and Secondary Refined Copper.

(3) Consumption of copper in scrap is obtained by the difference between copper content of output and consumption of refined copper, and should be considered over a period, since monthly figures of scrap consumption are affected by variations in the amount of work in progress.

METALS, JUNE, 1957

AVERAGE BRITISH PRICES FOR COPPER, TIN, LEAD, ZINC (Per Long Ton)

Mean of Bid and Asked Cash Quotation at Close of Morning Session on London Metal Exchange

	COPPER			TIN			LEAD			ZINC		
	Cash	3 Months	Settlement	Cash	3 Months	Settlement	Current Month	3rd Following		Current Month	3rd Following	
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.		£ s. d.	£ s. d.	
1954 Averages	248 17 11	239 17 7	249 0 11	719 8 11	709 17 7	720 6 7	98 8 12	94 7 4		78 5 4	77 16 11	
1955 Averages	351 14 11	341 0 3	352 5 6	740 2 12	736 12 11	740 12 8	105 17 3	105 9 6		90 13 4	89 12 3	
1956 Averages	328 14 5	324 13 1	329 1 8	787 14 9	774 7 7	788 13 3	116 6 5	114 8 9		97 14 3	95 3 7	
1957												
January	265 17 11	264 14 4	266 3 2	789 3 2	771 10 5	789 16 4	116 5 1	114 10 8		103 5 1	98 13 8	
February	245 11 2	244 2 0	245 16 3	770 16 9	752 9 6	771 8 6	113 3 0	112 6 11		99 8 11	96 17 0	
March	239 10 11	239 2 9	239 14 6	770 14 6	756 8 7	771 7 2	113 2 1	112 6 11		96 12 3	94 15 9	
April	241 19 2	242 15 9	242 2 0	774 4 9	768 7 6	774 17 6	111 17 5	111 14 1		98 7 6	94 13 5	
May	237 17 5	238 1 2	238 0 3	765 8 1	763 8 6	765 15 3	99 9 3	99 16 1		85 15 7	82 8 3	

of 1956, few people anticipated when 1957 began that possible exports would be on such a scale, and as a result, expectations of a surplus in world supplies this year have increased. However, it seems likely that this surplus will not be of greater proportions than could be taken care of by the Buffer Stock, although pending some indication of a rise in world consumption in 1958, there seems a possibility of some difficulties next year.

Meanwhile, until or unless world demand improves, there seems little immediate chance of prices moving out of the bottom of the three ranges laid down in the International Tin Agreement, so that users generally are not encouraged to add appreciably to their stocks.

Lead Weaker

Having been rather weak in anticipation of lessened American Government support in the future, the lead market here has in no way been improved by the announcement of the main proposals in the new U. S. Government mineral program and the revisions in the barter policy.

The prospect of differential U. S. import taxes or duties on foreign lead, with these imposts rising as prices fall, has not done anything to encourage sentiment here, the general view being that the effect of such a development must be, if anything, to depress world market levels. Of even greater significance to the European market perhaps, is the indication that barter is likely to be more difficult and less plentiful so that if the two factors are taken together, the implications are that the

U. K. TIN STATISTICS
According to the British Bureau of Non-Ferrous Metal Statistics, U. K. stocks at the end of March were 3,450 tons (1,591 tons held by consumers) compared with 3,169 tons (consumer: 1,536 a month earlier). U. K. production in March was 2,835 tons primary tin, and 32 tons secondary, against 2,688 tons and 33 tons respectively in February. Consumption of primary tin was not particularly good at 1,878 tons. Details are given below:

TRADE	Mar. 1957	Jan.-Mar. 1956	Mar. 1957
Tinplate	1,000	2,533	3,107
Tinning:			
Copper Wire	45	132	134
Steel Wire	8	27	24
Other	52	224	180
	105	383	338
Solder	135	735	542
Alloys:			
Whitemetal	231	756	698
Bronee & Gunmetal	221	713	651
Other	33	110	98
	485	1,579	1,447
Wrought Tin (1)			
Foil & Sheets	28	91	83
Collapsible Tubes	23	89	87
Pipes, Wire & Capsules	4	13	20
	55	193	190
Chemicals (2)	89	251	295
Other Uses (3)	9	32	29
Total all trades	1,878	5,706	5,948

Notes:

(1) Includes Compo and "B" Metal. (2) Mainly Tin Oxides. (3) Mainly Powder.

world outside the U. S. A. may feel the brunt of any surpluses of production over consumption more sharply than it has done over the last year or two.

As a result, prices have witnessed a further heavy fall in recent weeks, and now stand at the lowest level for about three years. Until just recently, actual consumption of lead in Europe seemed to be holding up fairly well, but the behavior of prices had made buyers, quite naturally, extremely cautious and for the time being the market has a rather depressing appearance. Even so, most people still agree that the potential surplus of lead supplies is less serious than in the case of zinc.

Zinc Prices Decline

As in the case of lead, the announcement of the U. S. Administration's proposals for a new mineral policy, coupled with the revised barter program, have only served to add to the fears of the zinc market here. Prices have plunged downwards rather precipitously to the lowest level for some two years to a figure which not a few people believe to be uneconomical for many mines outside the U. S. A. as well as inside it.

The biggest blow was the intimation that under the revised barter program, it would no longer be possible for concentrates to be shipped to the United States for smelting and subsequently delivered as metal against

barter transactions. In view of the already easier zinc supply position on world markets, this suggests that there may be a definite glut which can only have a depressing effect on prices.

Despite the very substantial fall in quotations which has already taken place, there are few people here who are yet prepared to say that the bottom has definitely been reached. Consumers in such circumstances are naturally buying as cautiously as possible, and it looks as if it may be some little time yet before the top-heavy position which has grown up under the extended period of artificial support of the world price structure by the American Government can be rectified, and the metal can find its true economic level.

Undoubtedly there is room for some improvement in the rate of buying, but the normally slack Summer season is not very far away and it cannot be said that there are many optimists as regards the next few months. On the credit side, recovery in the motor-car industry to practically the best previous level is obviously helping the brass trade, although the benefit so far has not been as marked as had been anticipated. This gives rise to the belief that during its depressed period, the U. K. automobile industry probably acquired pretty substantial stocks of components which it has recently been working off.

U. K. ZINC STATISTICS

There was a moderate increase in stocks of zinc in the U. K. in March. The British Bureau of Non-Ferrous Metal Statistics report that the total at the end of the month was 41,260 tons against 38,927 tons at the end of February. Consumer holdings, however, were somewhat lower at 18,415 tons (15,081 tons). U. K. smelters' output was 7,672 tons. Consumption was pretty steady at 27,049 tons, with details given below:

TRADE	Mar. 1957	Jan.-Mar. 1956	Mar. 1957
Brass	7,977	30,755	24,828
Galvanizing	9,254	27,693	28,543
of which: General	2,875	8,962	8,833
Sheet	3 3 3	8,094	10,192
Wire	1,833	5,702	5,559
Tube	1,253	4,935	3,959
Rolled Zinc	1,951	5,980	6,301
Zinc Oxide	2,230	7,926	6,930
Zinc Die-casting & Forming Alloy	3,423	10,321	9,015
Zinc Dust	1,246	2,332	3,180
Miscellaneous uses	968	2,990	3,003
Total all trades	27,049	87,997	81,810
of which:			
Slab Zinc			
High Purity (99.99%)	3,846	11,571	10,449
Electro & High Grade (99.95%)	4,829	17,893	14,899
Prime Western g.o.b. & Debaud	10,889	33,148	33,765
Remelted Zinc	536	1,455	1,779
Brass & other Copper Alloy scrap (Zinc content)	3,656	14,348	11,396
Scrap Zinc Metal, Alloy Residues, etc. (Zinc Content)	3,293	9,582	9,522

U. K. LEAD STATISTICS

At the end of March, stocks of imported virgin lead in the U. K. were 24,195 tons (24,378 tons a month earlier) and 10,682 tons of English refined (12,522 tons), reports the British Bureau of Non-Ferrous Metal Statistics. Consumers held 15,180 tons of imported virgin (17,998 tons) and 6,577 tons of English refined (6,188 tons). Details of consumption are given in the following table:

	Mar. 1957	Jan.-Mar. 1956	Mar. 1957
Cables	9,575	27,996	29,055
Batteries — As Metal	2,626	7,570	7,252
Battery Oxides	2,154	7,706	6,435
Tetraethyl Lead	1,886	5,774	5,339
Other Oxides & Compounds	2,118	6,635	6,269
White Lead	725	2,901	2,283
Shot	381	1,281	1,196
Sheet and Pipe	5,573	17,855	17,109
Foil and Collapsible Tubes	362	1,343	1,216
Other Rolled and Extruded	551	1,943	1,704
Solder	1,058	3,302	3,199
Alloys	1,372	3,770	4,225
Miscellaneous uses	1,067	3,160	3,053
Total consumption	29,441	91,236	88,317
Of which:			
Imported Virgin Lead	13,856	46,753	41,144
English Refined	7,071	21,125	21,058
Scrap including Remelted	8,514	23,358	26,115

United States Duties on Principal Ore and Metal Imports

(Including Revisions in Effect June 30, 1956, Under Geneva Agreements)

(Quantities Are in Pounds Unless Otherwise Stated; n.s.p.f. Stands for "Not Specially Provided For.")

COPPER

NOTE — The excise tax of 4c a pound on copper (which was reduced to 2c a pound by the Geneva Trade Agreement) was suspended in April, 1947, until March 31, 1949, and on expiration it was further suspended until June 30, 1950. The tax was reimposed on July 1, 1950. It was suspended again on May 22, 1951, retroactive to April 1, 1951, and until February 15, 1953, and again until June 30, 1954. Suspension further extended to June 30, 1955, and again until June 30, 1958. If import tax is restored, the 1956 Geneva Agreement provides for 5% reductions effective on June 30 of 1956, 1957 and 1958, provided the price is above 24c; if the price is below 24c the 2c tax would prevail.

Copper ore and concentrates, usable as flux, etc., copper content	free
Copper ore and concentrates, product of Cuba and Philippines, copper content	free
Copper ore and concentrates, copper content	free
Regulus, black, or coarse copper, and cement copper, copper content	free
Unrefined black, blister, and converter copper in pigs or converter bars, copper content	free
Refined copper in ingots, plates or bars, copper content	free
Copper rolls, rods or sheets	1 1/4c lb.
Copper seamless tubes and tubing	3 1/2c lb.
Copper plain wire	12 1/2%
Copper brazed tubes†	5 1/4c lb.
Old and scrap copper, fit only for remanufacture; and scale and clippings, copper content	free

BRASS

Brass rods, sheets, plates, bars, strips, Muntz or yellow metal sheets, sheathing, bolts, piston rods, shafting and bronze rods, tubes and sheets	2c lb.
Brass tubes and tubing, seamless	2c lb.
Brass tubes, brazed, angles and channels	6c lb.
Brass and bronze wire	12 1/2%

LEAD

NOTE — Import duties on lead-bearing ores, flue dust, and mattes of all kinds, lead bullion or base bullion, lead in pigs and bars, lead dross, reclaimed lead and antimonial lead were suspended February 12, 1952, and reimposed on June 26, 1952. Lead scrap duty was reimposed July 1, 1952.

Lead-bearing ores and mattes, n. s. p. f., lead content	3/4c lb.
Bullion or base bullion, lead content	1 1/16c lb.
Pigs and bars, lead content	1 1/16c lb.
Reclaimed, scrap, dross, lead content	1 1/16c lb.
Babbitt metal and solder, lead content	1 1/16c lb.
Pipe, sheets, shot, glaziers' lead, and wire	5 1/16c lb.
Type metal and antimonial lead, lead content	1 1/16c lb.
White lead	1.05c lb.
Litharge	1 1/4c lb.
Red lead	15/16c lb.
Orange mineral	1c lb.

ZINC

NOTE — Import duties on zinc-bearing ores, and on zinc in blocks, pigs and slabs were suspended February 12, 1952, and reimposed on July 24, 1952. Tax on old zinc and dross and skimmings reimposed July 1, 1953.

Zinc-bearing ores, except pyrites containing not more than 3% zinc, zinc content	6/10c lb.
Zinc contained in zinc-bearing ores, n. e. s., not recoverable, zinc content	6/10c lb.
Zinc, old and worn out, fit only for remanufacture	3/4c lb.
Dross and skimmings	3/4c lb.
Zinc in blocks, pigs or slabs	7/10c lb.
Zinc in sheets	1c lb.
Zinc sheets, plated with nickel or other base metal, or solutions	1 1/4c lb.

Zinc dust	7/10c lb.
Zinc die-casting alloys	12 1/2%
Zinc oxide and leaded zinc oxides containing not more than 25% lead, dry	3/5c lb.
ground in or mixed with oil or water	1c lb.

MISCELLANEOUS METALS AND ORES

Aluminum, metal and alloys, crude, except alloys elsewhere provided for†	1.40c lb.
Aluminum scrap	free
Aluminum plates, sheets, bars, rods, circles, squares, etc.†	2.80c lb.
Antimony ore, antimony content	free
Antimony metal and regulus	2c lb.
Antimony needle or liquidated	1/4c lb.
Antimony oxide	1c lb.
Antimony sulphides	1/2c lb. & 12 1/2%
Arsenic, metallic†	2.80c lb.
Arsenious acid or white arsenic	free
Bauxite, crude*	free
Bauxite, refined**	1/4c lb.
Bismuth	17 1/8%
Bismuth salts and compounds	35%
Beryllium metal and compounds†	23 1/2%
Beryllium ore	free
Cadmium	3 3/4c lb.
Cadmium flue dust, cadmium content	free
Chrome ore or chromite	free
Chrome or chromium metal†	11 1/2%
Cobalt metal	free
Cobalt ore and concentrates, cobalt content	free
Magnesium, metallic†	17.20c lb.
Magnesium alloys, powder, sheets, wire†	19c lb. & 9 1/2%
Magnesium scrap	free
Manganese ores, containing over 10% manganese, manganese content	1/4c lb., except Cuba, free
Molybdenum ore or concentrates, molybdenum content†	33c lb.
Nickel ore, matte and oxide	free
Nickel and alloys, nickel chief value, n. s. p. f., in pigs, ingots, shot, cubes, grains, cathodes, or similar forms	1 1/4c lb.
Nickel, bars, rods, plates, sheets, castings, strips, wire or electrodes	12 1/2%
Nickel scrap	free
Nickel tubes, tubing	6 1/4%
(if cold rolled, drawn or worked — 2 1/2% extra)	
Platinum, grain, nuggets, sponge and scrap, oz. troy	free
Platinum in ingots, bars, sheets, or plates, not less than 1/8 in. thick, oz. troy	free
Platinum, ores, platinum content, oz. troy	free
Quicksilver or mercury	25c lb.
Selenium and salts	free
Tantalum	12 1/2%
Tin ore, cassiterite, and black oxide of tin, tin content	free
Tin in bars, blocks, pigs, grain, granulated, and scrap, and alloys, chief value tin, n. s. p. f.	free
Tungsten ore or concentrates, tungsten content	50c lb.

*Crude bauxite import duty suspended to July 15, 1958. **Under Public Law 25 alumina imported for use in aluminum production is free for entries from July 17, 1956 to July 16, 1958. †Tariff to be reduced 5% on June 30, 1957 and 5% on June 30, 1958, under Geneva Agreement which expires on June 30, 1959.

DOMESTIC PRODUCERS CUT COPPER 2.75c A POUND TO 29.25c; CUSTOM SMELTER PRICE DECLINES TO 29.00c

Zinc Drops to 10.50c, Lead to 14.00c as Revised U. S. Barter Program Fails to Support Markets; Tin Steady; Silver, Titanium, Silicon Off

June 14, 1957

L EAD and zinc prices declined again during the month in review. Lead slumped 1.00c a pound on June 11 to 14.00c New York while zinc slid another 0.50c on June 4 to a basis of 11.00c a pound East St. Louis for the Prime Western grades. Restrictions placed on the U. S. Department of Agriculture's revised barter program (see Washington Report on Page 5) virtually eliminated such swapping operations as the main price props for lead and zinc.

Consumers also wondered how long the 2.00c spread in the price of copper, as quoted by custom smelters and primary producers, would continue. Smelters indicated sales of electro copper at 30.00c a pound delivered were lagging. Producers adhered to their quotation of 32.00c a pound delivered.

Tin prices continued to fluctuate in a narrow range, but prices for some of the minor metals tended easier or did decline. Platinum was quoted at \$89 to \$95 an ounce, titanium sponge metal was reduced 50.00c a pound on June 3, and silicon metal prices were cut 1.50c a pound on June 12. Silver moved down on three separate occasions during the month in review (by 0.50c an ounce twice and 0.25c once) but on June 14 the New York price advanced 0.125c to 90.25c an ounce.

Lead and Zinc Decline

The reductions for lead and zinc bore out trade contentions that without the barter program it would be impossible to maintain domestic quotations for these metals. Since the end of April, when the U. S. Agriculture Department's Commodity Credit Corp. discontinued its barter program, the markets for both metals have been on a toboggan. Although the barter program has been resumed, it is so hemmed in by restrictions that there is little likelihood of any substantial tonnage of foreign lead and zinc finding its way into the U. S. supplemental stockpile.

Prospects also were gloomy that any tariff legislation, for stemming the flow of foreign lead and zinc to this market, would be enacted this year. The General Services Administration has increased its monthly purchases of strictly domestic lead and zinc for the long-term stockpile but such purchases have not been sufficient to absorb the surpluses of either metal nor counteract the practical cessation of the barter deals.

Some extent of the price support afforded the zinc market by the barter program may be obtained from the fact that from July 1956 through April 1957 the CCC acquired \$66,100,000 worth of zinc; on the basis of 13.50c a pound, this is equivalent to about 245,000 tons.

Lead Down 1.00c

In addition, the price trend for both lead and zinc has been downward on

the London Metal Exchange. The immediate and chief reason for the 1.00c reduction in lead to 14.00c a pound New York on June 11 was the further price slump in that metal on the LME. The London quotation on that date was equivalent to 13.375c c.i.f. New York, duty paid. It was obvious that a

COPPER PRICE DECLINES; CUT ANOTHER 1/2c LB.

U. S. primary producers reduced their copper prices 2.75c on June 19 to 29.25c a pound delivered; custom smelters on the same date cut their prices 1.00c to 29.00c. Smelters were bidding 23.25c a pound for No. 2 heavy copper and wire scrap on June 21. Brass and bronze ingots were cut 0.50c to 1.00c a pound on June 20. Effective July 1, Anaconda will cut copper output at its Yerington Mines, Nevada, about 416 tons a month. In overseas copper markets: The Rhodesian Selection Trust price was cut £19 on June 17 to £230 a long ton (28.75c a pound). The LME price on June 20 closed at £220 15s (about 27.59c a pound). On June 20, Katanga (Belgium) was down to 28.05c a pound, f.a.s. New York, with GIRM (French) at 29.74c f.a.s. New York.

The U. S. zinc quotation was reduced 0.50c on June 19 to a basis of 10.50c a pound East St. Louis for the Prime Western grade.

spread of 1.625c a pound between New York and London would divert Mexican lead that normally goes abroad, to the domestic market where the supply already was in excess of demand. Domestic smelters were faced with the prospects of accumulating lead at 15.00c a pound for which they were unable to find an outlet. Rather than run that risk, they cut the price 1.00c.

Some quarters were of the opinion that both domestic lead and zinc quotations were vulnerable to further declines. Meanwhile, the American Smelting & Refining Company's lead refinery at Monterrey, Mexico, was still idled by a strike at this writing that began on May 27. The plant produces about 12,000 tons of refined lead a month.

Zinc Reduced 0.50c

The slide in zinc began on May 6, when the 13.50c a pound East St. Louis level which had prevailed for Prime Western zinc since January 6, 1956, was cut 1.50c to 12.00c a pound. On May 13 it dipped another 0.50c, and again by another 0.50c to a basis of 11.00c on June 4.

Some factors believed a cut in production would prove more effective in putting the market back on its feet than a higher import duty on foreign zinc. Along these lines the Athletic Mining & Smelting Co., Fort Smith, Ark., and the American Zinc, Lead and Smelting Co., St. Louis, Mo., jointly announced on June 10 that the Fort Smith zinc smelter operations were reduced 40 per cent with curtailed operations to be continued for an indefinite period. The Fort Smith plant has been operating at an annual rate of 30,000 tons. Mt. Isa Mines, Ltd., an important Australian zinc producer

that had been shipping about 50,000 long tons of zinc concentrates to Europe annually for smelting and refining has discontinued shipments owing to the low price of zinc.

May Zinc Statistics

The May zinc statistics made it glaringly evident that too much metal was being produced and that even with the Government taking more zinc for its stockpile than ever before, the unsold stocks in producers' hands continued to pile up and could have only a depressing effect on the market.

Following are May statistics for zinc (all grades), in tons, with the April totals in parentheses; production, 96,855 (96,506); stocks in producers' hands at end of month, 112,775 (105,599); shipments to consumers, 59,989 (55,000); shipments for Government account, 27,516 (23,921); shipments to consumers, for export and drawback, and Government account, 89,611 (80,332); unfilled orders at end of month, 31,539 (42,102).

Copper Market Quiet

Copper consumers continued to buy from hand-to-mouth; first, because their own business has not shown any great improvement and, secondly, because of the price uncertainty. At the close of trading on June 14 the bid for cash electro copper on the London Metal Exchange was equivalent to 28.50c a pound. Primary producers adhered to their 32.00c delivered quotation with custom smelters at 30.00c. The 2.00c spread in the producer and smelter quotations did not result in any rush of orders for smelter copper since outside market dealers have been offering electro at 29.75c a pound delivered.

Smelters, with the LME copper price trend downward, did cut their buying prices for copper scrap 0.25c a pound on June 11 to a basis of 24.25c a pound for No. 2 heavy copper and wire scrap.

The large Belgian producer, Union Minière du Haut Katanga, reduced its copper price on June 13 to 28.95c a pound f.a.s. New York, a reduction of 45 points from the 29.40c level which had been in effect since May 16. GIRM, the French selling agency, on the same date cut its price to the equivalent of 30.39c f.a.s. New York.

RST Cuts Copper Output

The announcement by the Rhodesian Selection Trust that two of its units, Roan Antelope and Mufulira, cut their output by 10 per cent, effective June 1, impressed neither the LME nor domestic producers. The Anglo-American group said it was not planning any voluntary production cuts and Chile indicated it had no intention of doing so. Union Minière du Haut Katanga made no comment. Meanwhile, workers at the Mufulira mine that had gone on strike May 7 returned to their jobs on June 11, and

(Continued on Page 16)

Domestic Metal Markets

(Continued from Page 15)

workers at the Roan Antelope mine, who had walked out on June 11, were scheduled to return to work on June 13.

The only firms to date, besides the RST units, which have announced monthly production cuts are: Anaconda, 2,000 tons; Phelps Dodge, 2,250; Howe Sound, 1,700; O'okiep Copper, 400, and Miami Copper, 300 tons. On an annual basis, including the RST cutback, the curtailment is around 85,000 tons, a quantity held to be insufficient to correct the present imbalance between supply and demand.

Tin Moves in Narrow Range

The domestic tin market has been quiet with prices moving in a narrow range. The New York spot price for Straits tin was 98.50c a pound on June 13; the last previously quoted price in this space was 98.375c for May 15. During the May 15-June 13 period, the high was the 98.625c for May 29, with the low of 97.75c registered on May 20.

Alcoa "Put" Accepted

The General Services Administration reported on June 6 it was accepting 50,000 tons of a total "put" of 125,000 tons of primary aluminum offered by Aluminum Co. of America. The remaining 75,000 tons is subject to review.

Primary aluminum 30-pound ingot, 99 per cent plus grade, was unchanged at 27.10c a pound (f.o.b.), but secondary aluminum ingot prices, in an increasingly competitive market, continued to ease.

Platinum Easier

Platinum was being offered at \$89 to \$95 an ounce. Refiners maintained their official range of \$92 to \$95 an ounce but the precious metal was available in the dealer market at \$89.

Silver Lower

The New York silver price advanced

0.125c an ounce on June 14 to 90.25c an ounce. The advance, however, was not sufficient to offset during the month in review, a 0.50c drop on May 28, a decline of 0.25c on June 10, and another 0.50c cut on June 13.

Titanium Sponge Reduced

Du Pont cut its titanium sponge prices 50.00c a pound, effective June 3, with Titanium Metals Corp. of America taking similar action. Titanium Metals also reduced its titanium mill product prices an average of 10 per cent on June 1.

Silicon Metal Cut 1½c

Electro Metallurgical Co. reduced prices for all grades, sizes and quantities of silicon metal 1.50c a pound on June 12. The maximum 0.50% iron grade is 20.50c a pound for carload lots of lump material in bulk, delivered by rail freight.

Washington Report

(Continued from Page 5)

unbroken. The latest House-Senate Conference Committee has been unable to agree on the subject and the question may come up on the floor of the House shortly. The Senate has twice voted to provide \$30,000,000 for continued purchases of tungsten, asbestos, columbium-tantalum and fluorspar until the end of the current fiscal year on June 30, 1957.

Felix Wormser Resigns

Felix E. Wormser, Assistant Secretary of Mineral Resources, Department of Interior, has submitted his resignation to the White House. President Eisenhower, in accepting "with regret" the resignation, effective June 15, said Mr. Wormser had "made a large contribution to the formulation of Administration policies" and that "tangible evidence of your highly effective work will be available to the American people as they continue to benefit from these resources in the decade ahead."

Supply Cut, Demand Rise Can Halt Drop in Copper

(Continued from Page 7)

tuations of the copper price. But there has been another important factor which is sometimes forgotten. It is the inventory policies of buyers of refined copper and end consumers of copper. These policies are dictated I think chiefly by financial considerations but at times they have been influenced here and abroad by speculation.

Some of the fluctuations of the copper price can be attributed to "stop and go" purchasing — sometimes selling — policies on the part of consumers and government.

Stockpiling Suggested

It has been suggested that the large low-cost mine producers of copper could afford to accumulate inventories of refined copper. These inventories would be offered for sale when demand is in excess of production. This suggestion merits careful consideration.

Some time ago I read a book, written in 1929, in which the author estimated that the per capita consumption of copper in the United States would double each decade. Doubling each decade is a growth factor of about 7¼ per cent per annum. At that time the consumption in the United States was about 17 pounds per capita. If the author had been right, the demand for copper in the United States in 1956 would have been well over 100 pounds per capita. Actually it was about 18 pounds of refined copper. This illustrates why I am allergic to making predictions.

Copper Use Growth

However, I think I am safe in the generalization that copper has a natural and powerful factor of growth of consumption. Practically all new developments need copper. Copper is both an old and a new metal. Most of the copper consumption today is for uses that were unknown 100 years ago and copper may be consumed 100 years from now for uses unknown today.

The copper industry needs improved methods of marketing, increased promotional work, basic research, and better statistics. If we are to succeed against aggressive, alert, intelligent and persistent substitute materials, we will have to work hard and use more imagination.

Proposed Common Market

A development which may have a profound effect on long range copper prospects is the proposed common market of six European countries and the free trade area which would include the British Commonwealth. If successful, this development could change the present international flow of copper and increase consumption.

Copper is an industrial metal with a great growth potential. The use of copper abroad per capita is substantially less than in the United States. The trend is clearly for an increased use here and particularly in foreign countries. Copper depends not on war but on disarmament and peace. I have great confidence in the future of copper. I suggest that in your advertising you consider using the slogan: "Do you want to progress? Use copper! Copper is progress!"

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Daily Metal Quotations in May, 1957

The following quotations are taken from the Daily Metal Reporter
(In Cents Per Pound)

	Copper			Tin- Straits New York		Lead		Zinc		Alumi- num		Anti- mony		Silver					
	Producers' Price	Del. Conn.	Custom Smelters' or Outside Price	Electro t. o. b. Refinery	Lake Del.	Average Electrolytic Export Price F. a. s. N. Y.	Spot	Prompt	New York	Outside St. Louis	Prime West. t. o. b. E. St. Louis	Prime West. Del. N. Y.	Brass Spec. E. St. Louis	High Grade Delivered	Spec. High Grade Delivered	30-Lb. Ingot (t. o. b.)	Domestic Spot 99.5% (t. o. b.)	I. o. b. Laredo	Cents Per Ounce New York
MAY																			
1	32.00	32.00	31.00	31.10	32.00	30.00	99.00	98.875	16.00	15.80	13.50	14.00	13.75	14.85	15.25	27.10	33.00	33.00	91.375
2	32.00	32.00	30.75	30.85	32.00	30.00	99.00	99.00	16.00	15.80	13.50	14.00	13.75	14.85	15.25	27.10	33.00	33.00	91.375
3	32.00	32.00	30.50	30.85	32.00	30.00	99.00	99.00	16.00	15.80	13.50	14.00	13.75	14.85	15.25	27.10	33.00	33.00	91.375
4	32.00	32.00	30.50	30.85	32.00	30.00	99.00	99.00	16.00	15.80	13.50	14.00	13.75	14.85	15.25	27.10	33.00	33.00	91.375
5	32.00	32.00	30.50	30.85	32.00	30.00	98.625	98.625	16.00	15.80	12.00	12.50	12.25	13.35	13.75	27.10	33.00	33.00	91.375
6	32.00	32.00	30.50	30.85	32.00	30.00	98.50	98.50	16.00	15.80	12.00	12.50	12.25	13.35	13.75	27.10	33.00	33.00	91.375
7	32.00	32.00	30.50	30.85	32.00	30.00	98.25	98.25	16.00	15.80	12.00	12.50	12.25	13.35	13.75	27.10	33.00	33.00	91.375
8	32.00	32.00	30.50	30.85	32.00	30.00	98.25	98.25	16.00	15.80	12.00	12.50	12.25	13.35	13.75	27.10	33.00	33.00	91.375
9	32.00	32.00	30.00	30.60	32.00	30.00	98.25	98.25	15.50	15.30	12.00	12.50	12.25	13.35	13.75	27.10	33.00	33.00	91.375
10	32.00	32.00	30.00	30.60	32.00	29.875	98.25	98.25	15.50	15.30	12.00	12.50	12.25	13.35	13.75	27.10	33.00	33.00	91.375
11	32.00	32.00	30.00	30.60	32.00	29.875	98.25	98.25	15.50	15.30	12.00	12.50	12.25	13.35	13.75	27.10	33.00	33.00	91.375
12	32.00	32.00	30.00	30.60	32.00	29.875	97.75	97.75	15.50	15.30	11.75	12.25	12.00	13.10	13.50	27.10	33.00	33.00	91.375
13	32.00	32.00	30.00	30.60	32.00	29.875	98.25	98.25	15.50	15.30	11.50	12.00	11.75	12.85	13.25	27.10	33.00	33.00	91.375
14	32.00	32.00	30.00	30.60	32.00	29.875	98.375	98.375	15.50	15.30	11.50	12.00	11.75	12.85	13.25	27.10	33.00	33.00	91.375
15	32.00	32.00	30.00	30.60	32.00	29.875	98.375	98.375	15.50	15.30	11.50	12.00	11.75	12.85	13.25	27.10	33.00	33.00	91.375
16	32.00	32.00	30.00	30.60	32.00	29.75	98.00	97.875	15.00	14.80	11.50	12.00	11.75	12.85	13.25	27.10	33.00	33.00	91.375
17	32.00	32.00	30.00	30.60	32.00	29.625	98.125	98.125	15.00	14.80	11.50	12.00	11.75	12.85	13.25	27.10	33.00	33.00	91.375
18	32.00	32.00	30.00	30.60	32.00	29.625	98.125	98.125	15.00	14.80	11.50	12.00	11.75	12.85	13.25	27.10	33.00	33.00	91.375
19	32.00	32.00	30.00	30.60	32.00	29.50	97.75	97.75	15.00	14.80	11.50	12.00	11.75	12.85	13.25	27.10	33.00	33.00	91.375
20	32.00	32.00	30.00	30.60	32.00	29.50	97.75	97.75	15.00	14.80	11.50	12.00	11.75	12.85	13.25	27.10	33.00	33.00	91.375
21	32.00	32.00	30.00	30.60	32.00	29.75	97.875	97.875	15.00	14.80	11.50	12.00	11.75	12.85	13.25	27.10	33.00	33.00	91.375
22	32.00	32.00	30.00	30.60	32.00	30.00	98.00	98.00	15.00	14.80	11.50	12.00	11.75	12.85	13.25	27.10	33.00	33.00	91.375
23	32.00	32.00	30.00	30.60	32.00	29.75	98.375	98.375	15.00	14.80	11.50	12.00	11.75	12.85	13.25	27.10	33.00	33.00	91.375
24	32.00	32.00	30.00	30.60	32.00	29.75	98.375	98.375	15.00	14.80	11.50	12.00	11.75	12.85	13.25	27.10	33.00	33.00	91.375
25	32.00	32.00	30.00	30.60	32.00	29.75	98.375	98.375	15.00	14.80	11.50	12.00	11.75	12.85	13.25	27.10	33.00	33.00	91.375
26	32.00	32.00	30.00	30.60	32.00	29.75	98.375	98.375	15.00	14.80	11.50	12.00	11.75	12.85	13.25	27.10	33.00	33.00	91.375
27	32.00	32.00	30.00	30.60	32.00	29.75	98.375	98.375	15.00	14.80	11.50	12.00	11.75	12.85	13.25	27.10	33.00	33.00	91.375
28	32.00	32.00	30.00	30.60	32.00	29.75	98.375	98.375	15.00	14.80	11.50	12.00	11.75	12.85	13.25	27.10	33.00	33.00	90.875
29	32.00	32.00	30.00	30.60	32.00	29.75	98.625	98.625	15.00	14.80	11.50	12.00	11.75	12.85	13.25	27.10	33.00	33.00	90.875
30	32.00	32.00	30.00	30.60	32.00	29.75	98.50	98.50	15.00	14.80	11.50	12.00	11.75	12.85	13.25	27.10	33.00	33.00	90.875
AV.	32.00	32.00	30.163	30.677	32.00	29.841	98.347	98.335	15.385	15.185	11.933	12.433	12.183	13.283	13.683	27.10	33.00	33.00	91.307
HL.	32.00	32.00	31.00	31.60	32.00	30.00	99.00	99.00	16.00	15.80	13.50	14.00	13.75	14.85	15.25	27.10	33.00	33.00	91.375
LO.	32.00	32.00	30.00	29.60	32.00	29.50	97.75	97.75	15.00	14.80	11.50	12.00	11.75	12.85	13.25	27.10	33.00	33.00	90.875

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Research Needed to Raise Lead, Zinc Consumption

(Continued from Page 11)

many applications. This is also true for lead. In order to compete effectively, particularly in these times when everybody is making every effort to reduce costs, lead and zinc producers must also make every effort to see that their products are priced competitively.

The great bulk of the captive zinc die casting facilities which represent approximately 33 per cent to 35 per cent of the total are for automotive use. In addition to this the automotive industry in 1956 took 53 per cent of the zinc base die castings produced by the job shops. Home appliances accounted for 22 per cent from these sources, the balance going to a large variety of miscellaneous uses. It is therefore quite obvious that zinc base die castings must be kept competitive by every appropriate means in this most important field of automotive manufacturing.

The consumption of zinc for brass and bronze, which is third, after galvanizing and die casting, has remained relatively stable during our base period, except for one year 1949 when consumption dipped rather badly. Other uses have also remained fairly steady with a tendency to increase.

U. K. Zinc Use

The pattern of consumption of slab zinc in the United Kingdom differs somewhat from that on this Continent. Galvanizing is the largest user of slab zinc followed closely by brass, with die casting a very poor third using only a little better than one-third of the slab zinc consumed by the other two uses.

During the past ten years the consumption of zinc in the United Kingdom has remained fairly steady, exhibiting an average annual growth of only one-tenth of one per cent as compared to the 5 per cent per year for the world as a whole and 4.3 per cent per year for Free Europe including Britain. Although accurate statistics are not available it is apparent that the greatest percentage increase in zinc consumption since the war has taken place outside the United States and the United Kingdom.

Turning back to consumption in Britain we find that consumption for galvanizing has made the only progress, having increased at a rate of about 3.2 per cent per year. As in this country continuous strip galvanizing has made rapid strides so that by the end of this year, if present plans are completed, there will be four lines in operation.

The job galvanizing trade in the United Kingdom is progressive and its technical committees have published and disseminated much information on galvanizing and galvanizing practices. One field which is under very active investigation is the protection of overhead steel structures, required for the modernization and electrification of many sections of the British Railways.

Other uses for slab zinc such as brass, die casting, rolled zinc, etc., have either remained about stable or have declined slightly. Here again the zinc base die casting industry is

very closely tied to the automotive industry which consumes some 65 per cent to 68 per cent of the castings produced, so that the recent difficulties of this industry were quickly reflected in zinc consumption for die casting.

Use in Other Countries

From the statistics which are available it appears that of all the countries of Free Europe, West Germany has made the best recovery in zinc consumption and current consumption is almost five times that of 1947.

In Canada, where the pattern of consumption is not too different from that of this country, zinc consumption has increased by about one-third, while in Australia and New Zealand the increase has been close to 90 per cent. In Japan, India and Africa the increase has been most encouraging. If it were not for one important circumstance we could take an optimistic view of the future of the zinc industry. Although zinc consumption throughout the world has been increasing, zinc production over the same period has increased at an even greater rate so that a substantial world surplus of production over consumption exists. There is every indication that this condition will continue. At the present time these world surpluses are being withdrawn from the market and absorbed by the Government stockpile. This is an expedient measure, but the industry cannot base its future on the continuance of this or a similar program. From our point of view there is only one practical long term solution to this very serious problem and that is to increase consumption.

Extensive Research

How can this best be accomplished? We believe that extensive research on the present and future applications of zinc by the industry is the only practical and feasible course to be taken if this problem of over production is to be overcome. As an illustration, during the 1947-1956 period, while zinc consumption in this country increased at a rate of 3.2 per cent per year the consumption of aluminum increased at an annual rate of about 11.9 per cent. This was brought about largely through extensive and intensive research and promotion on the part of the aluminum industry. We find that, to many people, the word research conjures up a picture of a long haired scientist, probably a little untidy, working in a secluded laboratory on some abstruse problem which even if he is successful, is of little interest to anyone. A certain amount of this type of research is essential and provides the foundations upon which others may build. However, what we have in mind is practical applied research designed towards improving present applications of zinc, making them more economic and developing new uses which will be competitive with other materials.

Purer Forms

Earlier I mentioned purer forms in which lead and zinc are now available. I have here part of a crystal of zinc which is 99.9999 per cent pure. Perhaps it is too expensive for general applications but on the other hand it may have special properties which make it the only material suitable for some new application.

Certainly metals of comparable purity open up new avenues for research never before feasible. The effects of minor impurities can sometimes have disastrous effects. For example, not too long ago, the use of zinc anodes for cathodic protection was rapidly falling into disrepute, because they were really not effective. Research sponsored by the American industry revealed that the generally acceptable iron content of commercial grades of zinc was the villain. Now it will take arduous selling and promotion to overcome the prejudices which have been built up. With the assistance of industry, the Mines Branch of the Department of Mines and Technical Surveys in Ottawa has undertaken a research program on die casting alloys based on high purity commercial zinc to which is added controlled amounts of various impurities. Whether or not this specific work will yield useful results, of course, cannot be foretold and in fact may not be important. The important thing is that some producers and consumers of zinc have recognized the need for research and are willing to cooperate in its execution.

Lead World Reserves

What we have said for zinc applies equally to lead. At the present time lead is being consumed at a greater rate than new reserves are being discovered, and as a result world reserves are being gradually depleted. However, this situation could quickly reverse itself. We have heard a great deal about the research work that the automotive industry is engaged in in connection with the development of a gas turbine engine for passenger cars. These engines would not require high octane fuel. If this work is successful and the market for tetraethyl lead is lost to the industry we could have a world surplus of lead about equal to the present world surplus of zinc. Also, no new major uses for lead have been developed in recent years, although some uses such as in frits for low temperature glazes for steel and aluminum show promise. However, the fact remains that without some new applications to balance off, the loss of even part of one of the major present uses could make the future of lead look very gloomy. We of the lead and zinc industries cannot afford to wait until this happens, in fact we have possibly waited too long as it is. Recent economic studies conducted in this country indicate that three top industries which allocated 5.7 per cent of sales to research and development had a 52 per cent gain in profits. At the other end of the scale the three lowest industries which allocated only 0.2 per cent of sales to research and development showed a 3 per cent decline in profits. It seems to me that it is up to the Lead and Zinc Industries as a whole to decide now which category we will be in.

If we are to increase consumption to balance production now and in the future, the producers of lead and zinc must engage in extensive research individually, in cooperation with each other and in cooperation with consumers, not only to develop important new uses for lead and zinc but to improve the natural advantages which these metals have in present applications.

Copper Statistics Reported by Copper Institute

Combined Totals in U. S. A. and Outside U. S. A.

		(In tons of 2,000 pounds)				Stock Increases or Decreases		
		Crude Production		Refined	Deliveries to	Refined Stock		
		Primary	Secondary	Production	Customers	End of Period	Blister	Refined Total
1955	Total	2,613,662	133,065	2,728,309	2,744,391	221,331	+18,418	+8,552 +11,112
1956								
May		237,177	18,608	269,846	256,245	252,130	-14,061	+12,161 -1,900
June		238,814	11,360	251,382	236,714	266,221	+1,309	+14,091 +15,130
July		233,182	11,174	240,633	198,800	303,225	+3,723	+37,004 +40,727
Aug.		241,295	10,005	242,614	224,546	315,572	+8,486	+12,347 +20,833
Sept.		221,401	8,126	217,522	219,479	309,351	+12,005	-6,221 +5,784
Oct.		255,442	13,924	263,752	234,080	333,952	+5,614	+24,001 +30,215
Nov.		249,360	10,204	254,377	239,181	345,181	+5,187	+11,229 +16,416
Dec.		236,512	13,124	250,173	237,003	354,420	-537	+9,239 +8,702
Total		2,862,839	152,536	2,987,060	2,830,407	354,420	+28,415	+133,089 +161,402
1957								
Jan.		240,790	15,514	256,729	263,014	344,972	-245	-9,448 -9,693
Feb.		235,679	10,577	242,952	214,796	370,128	+3,304	+25,156 +28,460
Mar.		244,407	11,850	264,649	263,271	369,256	-8,392	-872 -9,264
Apr.		234,909	12,369	252,857	253,295	363,463	-5,579	-5,793 -11,372
May		249,291	10,456	275,328	256,379	376,766	-15,581	+13,303 -2,278

In U. S. A.

1955	Total	1,036,702	124,760	1,467,448	1,446,354	61,554	.....	+14,446	.....
1956									
May		101,422	17,475	145,740	142,961	56,208	.....	-523	.....
June		98,496	12,471	136,713	131,299	60,671	.....	+4,463	.....
July		84,787	10,387	125,401	97,698	87,944	.....	+27,273	.....
Aug.		91,282	9,545	122,108	109,618	96,450	.....	+8,506	.....
Sept.		88,659	7,367	112,484	104,486	93,202	.....	-3,248	.....
Oct.		95,109	12,621	136,379	113,353	106,120	.....	+12,918	.....
Nov.		90,573	8,940	132,970	114,524	116,516	.....	+10,396	.....
Dec.		92,231	12,352	129,839	99,594	120,645	.....	+4,129	.....
Total		1,133,134	139,584	1,580,287	1,465,899	120,645	.....	+50,091	.....
1957									
Jan.		94,783	14,683	139,150	119,925	118,564	.....	-2,081	.....
Feb.		92,508	8,941	134,291	101,565	136,502	.....	+17,938	.....
Mar.		96,363	10,355	143,961	113,571	140,191	.....	+3,689	.....
Apr.		98,910	11,160	144,013	116,716	139,842	.....	-349	.....
May		96,001	9,618	151,045	120,351	155,365	.....	+15,523	.....

Outside U. S. A.*

1955	Total	1,576,960	8,305	1,260,861	1,298,037	159,777	.....	-21,752	.....
1956									
May		135,755	1,133	124,106	113,284	195,922	.....	+12,684	.....
June		140,318	1,136	114,669	105,415	205,550	.....	+9,628	.....
July		148,395	787	115,232	101,102	215,281	.....	+9,731	.....
Aug.		150,013	460	120,706	114,928	219,122	.....	+3,841	.....
Sept.		132,742	759	105,038	114,993	216,149	.....	-2,973	.....
Oct.		160,333	1,303	127,373	120,727	227,832	.....	+11,683	.....
Nov.		158,787	1,264	121,407	124,657	228,665	.....	+833	.....
Dec.		144,281	772	120,334	137,409	233,775	.....	+5,110	.....
Total		1,729,705	12,952	1,406,773	1,364,508	233,775	.....	+73,998	.....
1957									
Jan.		146,097	831	117,579	143,089	226,408	.....	-7,367	.....
Feb.		143,171	1,636	108,661	113,231	233,626	.....	+7,218	.....
Mar.		148,044	1,495	120,688	149,700	229,065	.....	-4,561	.....
Apr.		135,999	1,209	108,844	136,579	223,621	.....	-5,444	.....
May		153,290	838	124,285	136,028	221,401	.....	-2,220	.....

* Excluding Russia, Yugoslavia, Norway, Sweden, Japan and Australia.

Electrolytic Copper

Producers' Price, Del. Valley

Monthly Average Prices

(Cents Per Pound)

	1954	1955	1956	1957
Jan.	29.88	30.24	43.00	36.00
Feb.	29.88	33.00	44.03	33.318
Mar.	29.93	33.222	46.00	32.00
Apr.	29.98	36.00	46.00	32.00
May	30.00	36.00	46.00	32.00
June	30.00	36.00	46.00	.....
July	30.00	36.00	41.56	.....
Aug.	30.00	37.81	40.00	.....
Sept.	30.00	43.00	40.00	.....
Oct.	30.00	43.00	39.308	.....
Nov.	30.00	43.00	36.00	.....
Dec.	30.00	43.00	36.00	.....
Ave.	29.27	37.522	41.992	.....

Electrolytic Copper

Custom Smelters' Price, Del. Valley

Monthly Average Prices

(Cents Per Pound)

	1954	1955	1956	1957
Jan.	29.75	30.48	50.22	34.87
Feb.	29.75	33.00	52.07	32.273
Mar.	29.866	33.667	53.11	30.952
Apr.	29.965	36.00	48.88	31.24
May	30.00	36.00	44.221	30.163
June	30.00	36.00	40.00	.....
July	30.00	36.00	38.14	.....
Aug.	30.00	40.14	39.32	.....
Sept.	30.00	50.00	39.00	.....
Oct.	30.00	45.99	37.192	.....
Nov.	30.00	45.84	35.96	.....
Dec.	30.00	49.42	35.45	.....
Ave.	29.944	39.38	42.797	.....

Lake Copper

Producers' Price Delivered

Monthly Average Prices

(Cents Per Pound)

	1954	1955	1956	1957
Jan.	30.00	30.12	43.00	36.00
Feb.	30.00	33.00	43.783	33.182
Mar.	30.00	33.56	46.00	32.00
Apr.	30.00	36.00	46.00	32.00
May	30.00	36.00	46.00	32.00
June	30.00	36.00	46.00	.....
July	30.00	36.00	41.68	.....
Aug.	30.00	37.46	40.00	.....
Sept.	30.00	43.00	40.00	.....
Oct.	30.00	43.00	39.321	.....
Nov.	30.00	43.00	36.00	.....
Dec.	30.00	43.00	36.00	.....
Ave.	30.00	37.51	41.975	.....

Fabricators' Copper Statistics

(In tons of 2,000 pounds)

	Fabricators' Stocks of Refined Cop.	Unfilled Purchases of Refined by Fab. from Producers	Fabricators' Working Stocks	Unfilled Sales by Fabricators to Customers	Actual Copper Consumed by Fabricators	Excess Fabricators' Stocks Over Orders Bkd.
1951						
Total	280,402	32,147	295,385	303,050	1,392,111	-285,886
1952						
Total	333,455	32,652	292,157	275,312	1,389,451	-201,362
1953						
Total	380,881	25,022	309,664	170,917	1,375,869	-74,678
1954						
Total	.....	.....	.....	.....	1,232,090	.....
1955						
Jan.	334,105	66,122	302,658	159,016	136,539	-61,447
Feb.	323,425	75,840	301,597	180,898	118,786	-83,230
Mar.	311,235	85,859	301,937	187,827	143,544	-92,670
Apr.	316,575	88,992	304,117	205,308	115,073	-103,858
May	327,343	111,715	309,219	323,279	113,485	-102,440
June	327,696	126,703	309,972	234,578	132,377	-90,151
July	312,587	165,505	301,048	286,095	75,846	-109,051
Aug.	304,097	150,854	303,089	283,653	97,688	-131,791
Sept.	334,996	133,391	314,111	270,102	113,628	-115,826
Oct.	353,469	135,075	313,048	275,255	115,453	-99,759
Nov.	373,314	139,855	313,779	283,953	122,332	-84,563
Dec.	389,974	139,094	314,145	293,264	127,006	-78,341
Total	.....	.....	.....	.....	1,412,287	.....
1956						
Jan.	376,753	143,815	312,128	305,942	138,711	-97,502
Feb.	388,823	135,637	319,279	282,314	130,923	-77,133
Mar.	392,143	140,348	319,056	291,465	135,746	-78,030
Apr.	413,979	125,071	319,247	266,239	118,839	-36,436
May	435,083	131,023	318,592	249,352	122,253	-1,838
June	451,126	114,223	324,709	227,097	113,835	+13,282
July	465,015	109,040	334,584	220,810	81,275	+18,661
Aug.	457,679	115,295	338,818	221,975	117,937	+12,181
Sept.	445,679	114,981	338,488	204,154	115,867	+18,018
Oct.	440,706	112,893	336,856	198,517	119,440	+18,226
Nov.	435,216	110,792	335,829	178,814	119,441	+31,365
Dec.	437,187	117,601	336,217	183,834	99,223	+34,737
Total	.....	.....	.....	.....	1,416,278	.....
1957						
Jan.	435,635	107,231	335,944	178,326	119,517	+28,596
Feb.	422,266	110,174	334,542	178,913	114,298	+18,985
Mar.	429,410	104,551	338,454	164,623	106,170	+30,884
Apr.	429,708	98,638	335,921	164,410	117,041	+28,015
May	434,852	92,943	336,697	170,476	115,370	+20,622

Scrap Copper Receipts by Custom Smelters and Refineries in United States*

(In Short Tons)

	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957
Jan.	10,172	17,084	15,763	6,640	4,528	6,486	9,859	11,047	14,322	17,506
Feb.	11,890	20,238	12,500	5,153	3,633	10,337	8,490	15,198	14,497	11,145
Mar.	11,951	20,678	13,538	7,812	5,243	19,991	9,738	12,198	15,921	13,934
Apr.	15,125	15,968	12,304	8,553	6,214	16,553	9,044	13,162	17,233	14,288
May	16,357	14,237	8,749	8,458	8,033	13,857	8,697	15,133	20,805	12,397
June	11,178	9,809	20,523	8,628	4,425	10,945	13,309	14,765	14,758	.....
July	8,370	7,782	10,040	6,642	5,188	9,063	10,260	9,988	12,632	.....
Aug.	17,081	8,246	10,452	6,113	5,003	7,137	10,100	12,197	12,510	.....
Sept.	16,001	10,980	4,903	3,561	4,667	9,042	10,641	15,037	9,518	.....
Oct.	10,854	6,401	9,459	3,356	4,602	10,065	11,662	12,897	15,570	.....
Nov.	7,625	15,347	9,237	3,179	4,724	7,815	10,879	9,865	11,369	.....
Dec.	11,826	10,533	7,178	4,538	6,208	11,476	14,876	13,180	14,613	.....
Total	147,931	156,303	142,067	71,812	62,470	129,798	127,449	154,714	173,748	.....

* As compiled by Copper Institute.

Brass and Bronze Ingot Monthly Shipments

(Net Tons)

The following figures showing the combined shipments of ingot brass and bronze are compiled by the Ingot Brass and Bronze Industry and represent in excess of 95 per cent of the deliveries of the entire industry.

	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957
Jan.	27,841	26,998	19,456	18,874	28,415	28,315	24,423	20,661	25,201	27,736	27,736
Feb.	24,686	22,487	15,026	18,487	27,168	24,211	25,429	19,920	25,349	24,949	20,769
Mar.	17,477	24,282	14,550	22,494	31,997	23,890	28,256	23,653	29,713	28,310	21,948
Apr.	24,577	25,177	10,695	22,118	30,472	22,547	25,044	24,746	27,641	25,808	23,507
May	19,523	23,716	11,114	23,643	33,267	21,740	21,660	22,269	23,708	23,437	22,037
June	16,929	24,401	9,696	25,093	33,817	21,274	20,818	22,348	23,141	18,842	.....
July	16,728	20,456	10,220	21,609	32,016	18,947	19,321	17,074	18,513	17,364	.....
Aug.	18,589	24,098	14,194	26,689	25,285	21,807	20,156	21,684	27,018	23,812	.....
Sept.	19,025	23,641	16,208	28,811	22,285	22,770	21,463	22,464	26,349	20,929	.....
Oct.	22,806	21,559	18,026	32,240	23,124	25,811	22,280	24,080	25,223	23,045	.....
Nov.	21,666	21,731	18,488	31,748	23,544	24,441	21,860	23,061	25,102	21,818	.....
Dec.	23,862	20,954	17,960	28,575	20,987	22,983	20,541	21,274	21,448	18,046	.....
Total	263,711	279,500	175,643	303,563	332,378	277,736	271,251	263,233	298,406	274,096	.....
Aver	21,976	23,292	14,637	25,297	27,615	23,145	22,604	21,936	24,867	22,841	.....

METALS, JUNE, 1957

Mine Production of Copper in United States

(U. S. Bureau of Mines)
(In short tons)

	Eastern	Missouri	Western	Total
1953				
Ttl.	38,900	2,374	885,174	926,448
1954				
Ttl.	40,302	1,925	793,241	835,472
1955				
Dec.	6,758	179	81,638	88,575
Ttl.	68,622	2,140	921,838	992,600
1956				
Jan.	6,674	163	88,277	95,114
Feb.	6,688	164	82,519	89,371
Mar.	7,347	198	90,599	98,104
Apr.	6,821	195	88,592	95,608
May	6,960	191	92,531	99,682
June	6,720	173	88,049	94,942
July	6,132	185	74,283	80,600
Aug.	6,638	219	85,224	92,067
Sept.	6,195	163	78,934	85,292
Oct.	6,405	183	87,102	93,690
Nov.	6,498	150	81,984	88,632
Dec.	6,603	150	80,452	87,205
Ttl.	79,681	2,130	1,018,486	1,100,307
1957				
Jan.	6,607	172	86,431	93,210
Feb.	6,082	163	84,011	90,256
Mar.	6,714	196	88,257	95,167
Apr.	6,579	237	87,890	94,706

Average Custom Smelters' Scrap Buying Prices

(Cents per pound for carload lots del. consumers' works)

	No. 1 Copper Scrap	No. 2 Copper Scrap	Light Copper Scrap	Re-refinery Brass*
1955				
Av.	37.035	35.535	33.59	32.70
1956				
Mar.	45.77	44.27	41.77	41.02
Apr.	41.65	40.15	37.85	38.15
May	36.06	34.56	32.06	32.50
June	33.32	31.82	29.32	29.03
July	32.69	31.19	28.69	28.98
Aug.	34.269	32.769	30.269	30.75
Sept.	33.56	32.06	29.81	29.92
Oct.	30.964	29.464	27.214	27.44
Nov.	30.51	29.01	26.76	27.50
Dec.	30.423	28.923	26.673	27.42
Av.	36.25	34.75	32.33	32.47
1957				
Jan.	29.30	27.80	25.55	26.30
Feb.	26.47	24.97	22.72	23.75
Mar.	26.58	25.08	22.83	24.52
Apr.	26.895	25.395	23.145	24.695
May	25.985	24.485	22.235	23.735

* Of dry content for material having a dry copper content in excess of 60%.

Brass Ingot Makers' Scrap Copper Buying Prices

(Average Prices)
(Cents per pound del. refinery for 60,000 lbs. of each grade)

	No. 1 Copper Scrap	No. 2 Copper Scrap	No. 1 Composition	Heavy Yellow Brass
1955				
Av.	36.63	35.02	29.905	22.35
1956				
Mar.	45.77	44.27	36.46	27.76
Apr.	41.65	40.15	34.40	24.49
May	36.06	34.56	29.58	19.89
June	33.32	31.82	26.37	18.40
July	32.69	31.19	26.89	18.43
Aug.	34.269	32.769	29.833	20.463
Sept.	33.26	32.25	30.07	20.92
Oct.	30.687	29.187	28.058	19.538
Nov.	30.39	28.89	26.69	18.91
Dec.	30.195	28.695	27.50	18.96
Av.	36.17	34.67	30.483	21.34
1957				
Jan.	29.27	27.77	26.59	18.55
Feb.	26.47	24.97	23.50	16.65
Mar.	26.58	25.08	22.83	17.40
Apr.	26.895	25.395	23.50	17.50
May	25.985	24.485	23.144	17.144

United States Lead Statistics of Primary Refineries

(American Bureau of Metal Statistics)
(In tons of 2,000 lbs.)

	Stock At Beginning	Production Primary & Secondary	Total Supply	Stock At End	Domestic Shipments
1953	43,560	533,883	577,443	81,152	488,437
1954	81,152	551,618	632,770	92,719	475,551
1955					
July	44,665	23,850	68,515	39,856	26,547
August	39,856	36,912	76,768	34,111	41,469
September	34,111	50,453	84,564	30,753	46,250
October	30,753	53,747	84,500	29,913	52,062
November	29,913	52,623	82,536	28,855	51,370
December	28,855	50,448	79,303	31,089	48,171
Total		547,153	639,872	.....	531,339
1956					
January	31,089	51,306	82,395	32,469	49,746
February	32,469	49,475	81,944	41,450	39,411
March	41,450	54,174	95,624	52,089	39,344
April	52,089	52,976	105,065	53,958	44,986
May	53,958	47,961	101,919	50,460	40,703
June	50,460	47,367	97,827	45,951	41,458
July	45,951	48,479	94,430	49,134	36,483
August	49,134	48,404	97,538	39,304	48,404
September	39,304	53,530	92,834	40,542	47,519
October	40,542	54,815	95,357	42,314	45,254
November	42,314	50,744	93,058	37,192	47,349
December	37,192	54,063	91,254	41,181	44,191
Total		613,293	644,382	.....	529,484
1957					
January	41,181	50,854	92,035	42,905	40,549
February	42,905	48,102	90,917	48,699	37,517
March	48,699	52,357	101,056	46,184	38,225
April	46,184	56,170	102,354	57,444	37,583

In instances where the figures are not in balance it is due to shipments to other than domestic consumers.

Lead Prices at New York

(Common Grade)

	Monthly Average Prices (Cents per pound)			
	1954	1955	1956	1957
Jan.	13.26	15.00	16.16	16.00
Feb.	12.82	15.00	16.00	16.00
Mar.	12.94	15.00	16.00	16.00
Apr.	13.91	15.00	16.00	16.00
May	14.00	15.00	16.00	15.385
June	14.11	15.00	16.00	....
July	14.00	15.00	16.00	....
Aug.	14.06	15.00	16.00	....
Sept.	14.60	15.12	16.00	....
Oct.	14.975	15.50	16.00	....
Nov.	15.00	15.50	16.00	....
Dec.	15.00	15.56	16.00	....
Av.	14.06	15.14	16.013	....

Lead Sheet Prices

(To Jobbers, Full Sheets)

	Monthly Average Prices (Cents per pound)			
	1954	1955	1956	1957
Jan.	18.26	20.00	21.66	21.50
Feb.	17.82	20.00	21.50	21.50
Mar.	17.94	20.00	21.50	21.50
Apr.	18.91	20.00	21.50	21.50
May	19.00	20.00	21.50	20.885
June	19.11	20.00	21.50	....
July	19.00	20.00	21.50	....
Aug.	19.06	20.00	21.50	....
Sept.	19.60	20.12	21.50	....
Oct.	19.975	20.50	21.50	....
Nov.	20.00	20.50	21.50	....
Dec.	20.00	20.56	21.50	....

Industrial Classification of Domestic Lead Shipments

(American Bureau of Metal Statistics)

(In tons of 2,000 lbs.)

	Cable	Amm.	Foil	Batt'y	Brass Making	Sun- dries	Job- bers	Unclassified
1951	70,149	32,099	2,068	75,337	5,583	48,248	3,550	259,155
1952	74,616	30,809	1,374	77,238	5,160	50,943	5,671	246,283
1953	76,283	34,415	2,136	80,389	5,716	55,936	6,390	227,222
1954								
Nov.	5,816	3,795	383	3,898	520	3,202	721	16,628
Dec.	7,707	1,880	100	5,790	141	3,530	906	16,963
Total	75,412	30,246	2,811	66,088	5,192	57,369	9,170	229,264
1955								
Jan.	7,044	1,570	36	5,158	213	4,451	857	21,122
Feb.	5,869	3,200	348	6,758	289	4,796	1,013	24,373
Mar.	6,538	2,340	614	6,897	240	3,807	1,167	20,778
Apr.	5,909	2,625	201	6,533	463	5,178	1,234	22,735
May	6,145	2,950	251	8,127	321	4,435	1,145	22,756
June	6,623	950	50	6,833	290	5,175	1,293	23,816
July	2,313	150	307	4,365	100	3,763	946	14,603
Aug.	5,772	2,800	210	4,794	290	3,741	1,230	22,632
Sept.	6,552	2,295	415	7,794	354	4,711	1,149	22,980
Oct.	6,772	3,026	85	9,819	564	4,899	1,287	25,610
Nov.	6,606	2,433	70	13,875	387	3,795	874	23,330
Dec.	6,275	3,260	35	7,508	449	4,289	839	25,516
Total	72,418	27,599	2,622	88,461	3,960	52,994	13,034	270,251
1956								
Jan.	7,777	3,075	200	6,555	290	8,538	917	22,394
Feb.	5,974	2,435	384	5,983	275	3,592	871	19,897
Mar.	6,786	1,300	101	4,903	321	3,915	1,331	20,687
Apr.	6,744	2,950	310	4,839	260	3,522	1,376	24,985
May	6,490	2,825	...	5,027	131	3,513	964	21,753
June	8,502	2,150	...	4,167	186	3,645	1,021	21,787
July	3,497	904	...	5,007	80	2,859	1,453	22,683
Aug.	7,712	1,497	85	6,334	713	4,443	1,262	26,358
Sept.	6,354	1,850	135	6,303	230	5,038	1,339	26,270
Oct.	7,988	1,715	135	7,108	286	4,955	1,493	21,574
Nov.	6,096	2,351	...	8,556	226	5,573	792	23,755
Dec.	6,440	1,449	85	5,832	160	7,258	394	22,573
Total	80,360	24,501	1,435	70,614	3,158	56,851	13,213	274,716
1957								
Jan.	5,297	2,800	200	6,886	671	4,002	1,191	19,502
Feb.	5,103	1,450	350	6,549	508	4,820	625	18,112
Mar.	5,956	752	...	6,479	686	4,614	1,064	18,674
April	6,731	2,250	...	6,242	909	2,958	1,040	17,453

Battery Shipments

The following table shows replacement battery shipments in the United States as compiled by the Business Information Division of Dun & Bradstreet, Inc., for the Association of American Battery Manufacturers:

(In thousands of units)

	1954	1955	1956	1957
Jan.	1,836	1,518	2,058	2,638
Feb.	1,461	1,691	1,340	1,960
Mar.	1,226	1,356	1,348	1,254
Apr.	1,180	1,315	1,368	1,178
May	1,429	1,614	1,761	....
June	1,883	1,842	1,807	....
July	2,350	2,078	2,178	....
Aug.	2,548	2,852	2,571	....
Sept.	2,800	3,120	2,711	....
Oct.	2,739	3,120	3,015	....
Nov.	2,475	2,697	2,592	....
Dec.	1,844	2,625	2,265	....
Total	23,771	25,828	25,014	....

METALS, JUNE, 1957

Lead Stocks at Primary U. S. Smelters and Refiners

(American Bureau of Metal Statistics)
(In tons of 2,000 lbs.)

	In ore and matte and in process at smelters	— In base bullion (lead content) — At smelters & refineries	In transit to refineries	In process at refineries	Refined pig lead	Anti- monial lead	Total Stocks
1955							
Mar. 1	64,492	17,741	3,781	28,467	52,734	12,204	179,419
Apr. 1	57,577	20,063	2,309	28,564	47,496	12,385	168,394
May 1	59,686	17,468	3,496	25,373	43,207	11,749	160,979
June 1	59,632	17,705	1,941	27,979	39,892	11,055	158,204
July 1	58,182	14,707	2,941	30,579	34,432	10,233	151,074
Aug. 1	65,476	10,065	1,303	26,792	30,077	9,779	143,492
Sept. 1	75,057	17,183	3,744	29,660	26,859	7,252	159,755
Oct. 1	70,628	19,083	4,217	28,424	23,292	7,461	153,105
Nov. 1	71,257	20,632	4,276	28,596	21,828	8,085	154,724
Dec. 1	64,109	20,232	4,377	27,486	19,592	9,263	145,059
1956							
Jan. 1	71,812	16,532	3,764	27,625	21,196	9,893	150,822
Feb. 1	70,690	19,082	1,764	25,632	24,080	8,389	149,637
Mar. 1	71,023	16,406	2,583	27,619	32,355	9,095	158,981
Apr. 1	72,358	15,655	2,152	28,065	41,800	10,289	170,319
May 1	74,837	15,600	2,718	24,181	43,268	10,690	171,194
June 1	78,987	15,477	2,475	26,682	39,558	10,902	174,081
July 1	81,796	15,837	4,423	28,505	36,499	9,452	176,512
Aug. 1	76,985	16,556	3,516	29,603	33,210	10,924	176,094
Sept. 1	81,634	18,529	2,874	29,991	29,230	10,074	172,332
Oct. 1	77,787	15,991	4,413	28,083	29,361	11,181	166,816
Nov. 1	78,253	12,022	3,083	25,783	30,932	11,382	161,485
Dec. 1	82,197	9,095	4,132	25,627	25,360	11,832	158,243
1957							
Jan. 1	77,918	12,222	2,846	25,092	29,435	11,746	159,249
Feb. 1	80,451	10,636	4,061	25,827	32,418	10,487	163,880
Mar. 1	81,274	11,880	4,394	25,728	38,479	10,220	171,975
Apr. 1	82,461	14,598	3,593	25,401	36,390	9,794	172,237

Receipts of Lead in Ore and Scrap

By U. S. Smelters (a)

(American Bureau of Metal Statistics)

(In tons of 2,000 lbs.)

	Receipts of lead in ore			Receipts of lead in scrap etc. (b)	Total receipts in ore, & scrap
	United States	Foreign	Total		
1952 Total	405,990	98,276	504,266	41,845	546,111
1953 Total	351,183	155,788	506,971	42,994	549,965
1954 Total	336,291	158,081	494,372	49,864	544,236
1955					
April	28,707	16,347	45,054	3,249	48,303
May	28,511	13,377	41,888	4,879	46,767
June	28,273	14,667	42,940	4,509	47,449
July	23,027	3,826	26,853	649	27,502
August	30,249	11,859	42,108	3,942	46,050
September	29,377	14,881	44,258	3,623	47,881
October	30,073	20,845	50,918	5,655	56,573
November	27,736	13,022	40,758	3,802	44,560
December	29,363	24,136	53,499	3,150	56,649
Total	341,595	172,966	514,561	42,996	557,557
1956					
January	27,184	15,704	42,888	6,346	49,234
February	28,569	16,528	45,097	4,577	49,674
March	31,568	17,904	49,472	3,989	53,461
April	31,786	15,224	47,010	4,252	51,262
May	32,715	18,476	51,191	4,711	55,902
June	31,546	16,251	47,797	4,541	52,338
July	29,964	13,476	43,440	3,207	46,647
August	31,112	20,726	51,838	5,885	57,723
September	28,731	16,276	45,007	3,351	48,358
October	33,614	12,350	45,964	5,439	51,403
November	30,553	14,308	44,861	5,141	50,002
December	31,154	15,095	46,252	4,536	50,788
Total	368,499	192,318	560,817	55,925	616,792
1957					
January	30,632	19,961	50,593	4,471	55,064
February	31,410	15,059	46,469	4,564	51,033
March	33,445	18,813	52,258	3,058	55,316
April	31,343	13,042	44,385	2,848	47,233

(a) Receipts of lead in ore are computed on the basis of recoverable lead. Owing to the antimonial factor in this, which is probably on the low side, and also to the possibility that some lead receipts may escape attention, these monthly totals probably underrun the actual production of pig lead. (b) Inclusive only of scrap smelted in connection with ore, plus some scrap received by primary refineries.

METALS, JUNE, 1957

N. Y. Lead Price Changes

(Effective Date)

1949		Feb.	2....13.50
Nov. 16....	12.50	Mar.	4....13.90
Nov. 21....	12.00	Mar.	10....13.50
1950		Apr.	7....13.00
Mar. 9....	11.00	Apr.	16....12.50
Mar. 14....	10.50	Apr.	21....12.00
Apr. 20....	10.75	Apr.	29....12.50
Apr. 26....	11.00	May	18....12.75
May 4....	11.25	May	19....13.00
May 10....	11.50	May	26....13.15
May 11....	12.00	June	11....13.50
June 23....	11.50	July	20....13.75
1951		July	23....14.00
June 28....	11.00	Sept.	16....13.50
July 12....	11.50	1954	
July 13....	12.00	Jan.	18....13.00
Aug. 15....	13.00	Feb.	18....12.50
Aug. 21....	14.00	Mar.	9....12.75
Sept. 1....	15.00	Mar.	10....13.00
Sept. 8....	16.00	Mar.	26....13.25
Oct. 2....	**19.00	Mar.	29....13.50
Oct. 31....	17.00	Apr.	1....13.75
1952		Apr.	12....14.00
Apr. 29....	18.00	June	2....14.25
May 2....	17.00	June	15....14.00
May 12....	15.00	Aug.	25....14.25
June 23....	15.50	Sept.	7....14.50
June 24....	16.00	Sept.	15....14.75
Oct. 7....	15.00	Oct.	4....14.875
Oct. 14....	14.00	Oct.	5....15.00
Oct. 22....	13.50	1955	
Nov. 3....	14.00	Oct. 23....	15.00
Nov. 10....	14.25		15.50
Nov. 11....	14.50	Oct. 26....	15.50
Nov. 20....	14.25	Dec. 29....	16.00
Nov. 24....	14.00	1956	
Dec. 22....	14.25	Jan. 4....	16.50
Dec. 29....	14.50	Jan. 13....	16.00
Dec. 31....	14.75	1957	
1953		May 9....	15.50
Jan. 7....	14.50	May 16....	15.00
Jan. 12....	14.00	June 11....	14.00

**OPS Ceiling.

Antimonial Lead Stocks at Primary Refineries (A.B.M.S.)

(In tons of 2,000 lbs.)				
End of:	1954	1955	1956	1957
Jan.	14,691	14,902	8,389	10,487
Feb.	14,798	12,204	9,095	10,220
Mar.	11,985	12,385	10,289	9,794
Apr.	11,977	11,740	10,690	9,391
May	11,882	11,055	10,902	.....
June	9,798	10,233	9,452	.....
July	12,210	9,779	10,924	.....
Aug.	12,279	7,252	10,074	.....
Sept.	14,168	7,461	11,181	.....
Oct.	14,846	8,085	11,382	.....
Nov.	14,573	9,263	11,832	.....
Dec.	14,789	9,893	11,746	.....

Antimonial Lead Production by Primary Refineries (A.B.M.S.)

(In tons of 2,000 lbs.)				
End of:	1954	1955	1956	1957
Jan.	3,768	4,529	5,045	5,113
Feb.	4,257	4,777	5,888	5,468
Mar.	4,475	6,202	5,526	5,091
Apr.	4,470	5,343	5,818	6,183
May	4,373	4,737	5,405	.....
June	3,796	4,792	4,456	.....
July	5,991	1,153	3,853	.....
Aug.	6,455	2,946	5,343	.....
Sept.	5,869	6,650	6,709	.....
Oct.	5,532	8,016	5,378	.....
Nov.	5,364	7,985	6,993	.....
Dec.	5,255	6,907	5,766	.....

Total 59,875 64,037 66,180

U. S. Lead Consumption

(Bureau of Mines — In Short Tons)

	1957		
	Jan.-Mar.	Feb.	Mar.
Metal Products:			
Ammunition	9,950	3,134	3,794
Bearing metals	6,442	2,028	1,989
Brass and bronze	6,416	1,827	1,930
Cable covering	32,289	10,438	11,090
Calking lead	14,010	3,890	4,786
Casting metals	2,997	818	1,193
Collapsible tubes	2,247	615	801
Foil	1,162	279	540
Pipes, traps & bends	5,802	1,850	1,988
Sheet lead	6,683	2,303	2,165
Solder	18,618	6,243	5,940
Storage battery grids, posts, etc.	48,665	16,499	15,638
Storage battery oxides	48,902	16,316	14,959
Terne metal	384	78	170
Type metal	6,555	2,079	2,343
Total	211,112	68,387	69,326
Pigments:			
White lead	3,373	1,086	1,295
Red lead & litharge	20,629	7,075	7,101
Pigment colors	2,942	872	891
Other [†]	1,641	371	677
Total	28,585	9,334	9,964
Chemicals:			
Tetraethyl lead	41,959	13,135	14,031
Misc. chemicals	1,345	382	569
Total	43,304	13,527	14,600
Miscellaneous uses:			
Annealing	1,199	376	413
Galvanizing	363	138	97
Lead plating	71	27	10
Weights & ballast	1,267	359	462
Total	2,900	900	982
Other uses unclassified	4,305	1,261	1,498
Total reported	*290,216	*93,409	*96,370
Estimated unreported consumption	3,000	1,000	1,000
Grand total	*293,200	*94,409	*97,400
Daily average [‡]	3,258	3,371	3,142

[†] Includes lead content of leaded zinc oxide production.

^{*} Includes lead content of scrap used directly in fabricated products.

[‡] Based on number of days in month without adjustment for Sundays or holidays.

Consumers' Lead Stocks, Receipts and Consumption

(Bureau of Mines — In Short Tons)

	Stock [†] Feb. 28, 1957	Net Receipts In Mar.	Consumed In Mar.	Stocks Mar. 31, 1957
Soft lead	69,044	63,144	59,680	72,508
Antimonial lead	39,259	25,433	27,045	37,647
Lead in alloys	7,301	4,099	4,068	7,332
Lead in copper-base scrap	1,950	1,306	1,368	1,888
Total	117,554	93,982	*92,161	119,375

^{*} Excludes 3,558 tons of lead which went directly from scrap to fabricated products and 651 tons of lead contained in leaded zinc oxide production.

Consumption of Lead by Class of Product

(Bureau of Mines — In Short Tons)

MARCH

	Soft lead	Antimonial lead	Lead in alloys	Lead in copper-base scrap	Total
Metal products	33,975	26,455	4,045	1,368	65,843
Pigments	9,297	16	.....	.....	9,313
Chemicals	14,599	1	.....	.....	14,600
Miscellaneous	636	346	.....	.....	982
Unclassified	1,173	227	23	.....	1,423
Total	59,680	27,045	4,068	1,368	*92,161

^{*} Excludes 3,558 tons of lead which went directly from scrap to fabricated products and 651 tons of lead contained in leaded zinc oxide production.

U. K. Lead Consumption

(British Bureau of Non-Ferrous Metal Statistics)

(In tons of 2,240 pounds)

	1955	1956	1957
Jan.	29,062	31,012	29,657
Feb.	28,926	30,125	29,219
Mar.	33,225	30,099	29,441
Apr.	28,656	28,186	27,246
May	31,092	29,752	.....
June	32,627	31,501	.....
July	26,994	26,963	.....
Aug.	26,954	25,077	.....
Sept.	34,291	30,274	.....
Oct.	34,121	32,057	.....
Nov.	34,820	32,036	.....
Dec.	29,689	25,963	.....
Total	370,794	353,045	.....

American Antimony

Monthly Average Prices

In bulk, f.o.b. Laredo

(Cents per lb. in ton lots)

	1954	1955	1956	1957
Jan.	28.50	28.50	33.00	33.00
Feb.	28.50	28.50	33.00	33.00
Mar.	28.50	28.50	33.00	33.00
Apr.	28.50	28.50	33.00	33.00
May	28.50	28.50	33.00	33.00
June	28.50	28.50	33.00	.....
July	28.50	28.50	33.00	.....
Aug.	28.50	30.66	33.00	.....
Sept.	28.50	33.00	33.00	.....
Oct.	28.50	33.00	33.00	.....
Nov.	28.50	33.00	33.00	.....
Dec.	28.50	33.00	33.00	.....
Aver.	28.50	30.18	33.00	.....

Lead Imports and Exports

By Principal Countries

(A. B. M. S.)

Reported in pigs, bars, etc.; metric tons except where otherwise noted.

	1957		
	Jan.	Feb.	Mar.
IMPORTS			
U. S. [†] (s.t.)	31,410	22,423	20,784
Canada (s.t.)	551	.....	.....
Denmark	1,288	454	407
France	4,760	4,544	3,267
Italy [‡]	1,180	.....	.....
Netherlands	3,932	3,729	.....
Norway	669	782	.....
Sweden	1,272	984	.....
Switzerland	1,539	1,313	1,468
U. K. (l.t.)	16,257	16,062	10,931
India [*] (l.t.)	1,337	951	.....
EXPORTS			
U. S. [†] (s.t.)	314	1,420	868
Canada (s.t.)	8,946	6,632	7,044
Denmark	119	174	126
France	81	20	518
Netherlands	340	591	.....
Switzerland	2	.....	.....
Northern			
Rhodesia [*] (l.t.)	1,072	1,061	.....
Australia [*] (l.t.)	16,092	15,650	.....

[†] Refined.

[‡] Includes lead alloys.

^{*} British Bureau of Non-Ferrous Metal Statistics.

French Lead Imports

(A. B. M. S.)

(In metric tons)

	1957	1957	1957
	Feb.	Mar.	Apr.
Ore (gross weight)			
Algeria	6,447	7,973	8,391
Morocco	6,447	6,318	8,391
Fr. Equat. Africa	.....	1,000	.....
Tunisia	.....	1	.....
Madagascar	.....	22	.....
Pig lead	4,544	3,267	4,139
Belgium	128	581	254
Germany (W.)	315	575	295
U. Kingdom	.....	254	507
Algeria	2	.....	3
Morocco	2,328	715	1,023
Tunisia	1,771	1,142	1,997
Other countries	.....	.....	60
Antimonial lead	12	574	7

U. K. Lead Imports

(British Bureau of Non-Ferrous Metal Statistics)

(In tons of 2,240 lbs.)

	1957	1957	1957
	Feb.	Mar.	Apr.
(Gross Weight)			
Lead and			
lead alloys	10,062	10,931	20,806
Australia	6,873	6,984	15,174
Canada	1,825	2,526	3,300
Belgium	100	750	550
Yugoslavia	600	370	250
Peru	650	50	600
Other countries	14	251	932

METALS, JUNE, 1957

Domestic Zinc Statistics

American Zinc Institute

Commencing with January, 1948, all regularly operating U. S. primary and secondary smelters are included in this report. Production from foreign ores also is included.

(Tons of 2,000 lbs.)

	Stock Beginning	Pro- duction	Domes- tic	Shipments			Stock at End	Unfilled Orders at End	Daily Avg. Prod.
				Export & Drawback	Gov't Acc't	Total			
1950 Tl.	94,221	910,354	849,246	18,189	128,256	995,691			
1950 Mo. Avg.	75,862	70,770	70,770	1,516	10,968	82,974			
1951 Tl.	8,884	931,833	836,800	32,067	39,949	918,816	21,901	50,509	2,553
1951 Mo. Avg.	77,653	69,733	69,733	3,506	3,329	76,568			
1952 Tl.	21,901	961,430	803,343	56,202	36,626	896,171	87,160	45,264	2,627
1952 Mo. Avg.	80,119	66,945	66,945	4,683	3,052	74,681			
1953 Tl.	180,843	971,191	818,850	16,326	42,382	877,508	189,843	35,466	2,661
1953 Mo. Avg.	80,933	68,238	68,238	1,361	3,528	73,126			
1954									
Total	124,277	868,242	787,922	27,929	108,957	924,808	124,077	45,862	.....
Monthly Avg.	72,353	65,660	65,660	2,327	9,080	77,067	.....	.....	2,379
1955									
Jan.	96,165	89,179	79,720	1,823	12,959	94,507	90,837	40,087	2,877
Feb.	90,837	83,786	89,580	1,967	8,488	100,044	74,597	65,127	2,793
Mar.	74,579	86,177	83,336	3,602	10,434	97,572	63,184	70,087	2,780
Apr.	62,134	84,458	82,212	1,492	5,335	99,039	48,603	57,281	2,815
May	48,603	84,400	76,812	862	4,039	81,713	51,290	64,056	2,738
June	51,290	84,874	87,042	885	2,163	90,080	46,084	73,632	2,738
July	46,084	83,448	83,664	1,274	2,427	87,365	42,167	52,278	2,781
Aug.	42,167	89,449	85,770	36	1,942	87,748	43,868	61,746	2,886
Sept.	43,868	86,616	91,585	280	1,661	93,426	38,055	64,560	2,921
Oct.	38,055	92,578	87,016	684	1,963	89,657	40,979	72,908	2,986
Nov.	40,979	1,031,018	1,007,619	19,496	87,200	1,114,316	40,979	72,908	.....
Dec.	85,918	83,968	83,968	1,625	7,267	92,860	.....	.....	2,825
1956									
Jan.	40,979	90,313	87,723	1,054	1,155	89,982	41,330	60,717	3,018
Feb.	41,330	86,329	84,727	317	2,782	87,826	39,833	45,255	2,977
Mar.	39,833	91,690	84,204	460	6,821	91,486	40,038	53,070	2,958
Apr.	40,038	88,664	74,789	1,437	4,670	90,795	47,907	46,106	2,956
May	47,907	81,228	69,085	287	10,196	89,588	59,577	84,002	3,029
June	59,577	78,521	63,048	539	18,085	63,672	69,324	48,921	3,611
July	69,324	81,080	84,219	811	14,501	49,531	104,775	53,559	2,886
Aug.	102,775	89,549	79,707	1,235	16,075	88,017	104,307	55,769	2,880
Sept.	104,307	90,235	73,142	934	18,301	92,377	102,165	64,450	3,008
Oct.	102,165	93,492	84,991	465	21,392	106,848	88,810	53,425	3,016
Nov.	88,810	91,808	82,478	787	27,168	110,433	70,185	45,866	3,060
Dec.	70,185	98,234	80,772	671	18,354	99,797	68,622	34,913	3,169
Total	1,062,954	869,270	869,270	9,027	157,014	1,035,311	.....	.....	2,904
Monthly Avg.	88,580	72,439	72,439	752	13,085	86,275	.....	.....	3,014
1957									
Jan.	68,622	93,452	67,273	450	15,377	83,100	78,974	42,922	3,014
Feb.	78,974	88,078	67,441	1,527	10,905	80,163	86,889	56,421	3,142
Mar.	87,040	96,924	67,097	1,538	25,608	94,607	89,357	56,818	3,127
Apr.	89,357	96,506	55,000	1,411	23,921	80,332	105,531	42,102	3,217
May	105,531	96,855	59,989	2,106	27,516	89,611	112,775	31,539	3,124

U. S. Consumption of Slab Zinc

	Bureau of Mines By Industries (Short Tons)					Zinc oxide & other	Total
	Galvan- izers	Die Casters	Brass products	Rolled zinc			
1949 Total	348,544	197,387	84,257	55,100	17,643	702,931	
1950 Total	434,094	281,385	136,451	67,779	27,656	947,365	
1951 Total	386,373	266,442	141,456	64,000	28,738	887,009	
1952 Total	375,563	236,022	155,311	51,508	30,885	849,289	
1953 Total	403,162	305,346	177,301	53,784	38,037	977,636	
1954							
Total	398,599	286,817	107,293	45,979	33,342	876,130	
1955							
March	37,648	37,682	12,718	4,635	3,305	95,988	
April	36,136	36,628	11,034	3,833	3,181	90,812	
May	37,471	36,926	12,404	4,203	3,409	94,413	
June	37,874	32,821	13,305	5,012	3,227	92,239	
July	33,433	23,910	7,017	2,882	2,897	70,589	
August	38,317	30,168	10,244	5,431	3,027	87,687	
September	39,181	31,804	12,672	4,185	3,507	91,849	
October	40,030	35,136	13,961	4,714	3,596	97,940	
November	38,116	38,616	13,465	3,952	3,636	98,275	
December	37,249	36,982	15,003	3,900	3,621	96,755	
Total	439,694	404,790	144,816	50,363	39,302	1,081,468	
1956							
January	38,148	36,554	13,097	4,442	3,665	95,906	
February	37,702	31,274	12,678	3,883	3,325	88,562	
March	38,662	31,332	12,889	4,433	3,566	90,882	
April	37,092	29,226	12,635	4,010	3,359	86,322	
May	38,064	26,003	12,218	3,431	1,260	80,976	
June	37,005	21,790	8,351	3,454	1,315	71,915	
July	12,960	21,425	5,193	3,187	2,883	45,648	
August	33,840	26,814	8,420	4,222	2,959	76,255	
September	37,313	26,998	8,370	3,397	3,280	79,358	
October	40,875	34,985	10,164	4,158	3,695	93,877	
November	36,767	32,812	9,581	3,625	3,539	87,224	
December	32,790	33,238	8,799	3,140	3,405	82,272	
Total	421,218	352,451	122,395	45,382	36,251	988,097	
1957							
January	34,337	37,517	10,800	3,502	3,434	90,490	
February	31,686	32,520	9,156	3,284	3,206	80,752	
March	30,747	30,946	8,860	3,553	3,378	78,384	

Prime Western Zinc Prices

	(Cents per pound) (In tons of 2,240 pounds)			
	1954	1955	1956	1957
Jan.	9.76	11.50	13.46	13.50
Feb.	9.375	11.50	13.50	13.50
Mar.	9.66	11.50	13.50	13.50
Apr.	10.25	11.93	13.50	13.50
May	10.29	12.00	13.50	11.933
June	10.96	12.25	13.50	.....
July	11.00	12.50	13.50	.....
Aug.	11.00	12.50	13.50	.....
Sept.	11.44	12.96	13.50	.....
Oct.	11.50	13.02	13.50	.....
Nov.	11.50	13.00	13.50	.....
Dec.	11.50	13.00	13.50	.....
Av.	10.69	12.305	13.497	.....

High Grade Zinc Prices

	(Delivered) N. Y. Monthly Averages (Cents per pound)			
	1954	1955	1956	1957
Jan.	11.11	12.85	14.81	14.85
Feb.	10.725	12.85	14.85	14.85
Mar.	11.01	12.85	14.85	14.85
Apr.	11.60	13.28	14.85	14.85
May	11.64	13.35	14.85	13.283
June	12.31	13.60	14.85	.....
July	12.35	13.85	14.85	.....
Aug.	12.35	13.85	14.85	.....
Sept.	12.79	14.31	14.85	.....
Oct.	12.85	14.37	14.85	.....
Nov.	12.85	14.35	14.85	.....
Dec.	12.85	14.35	14.85	.....
Av.	12.04	13.655	14.847	.....

U. K. Zinc Consumption

	British Bureau of Non-Ferrous Metal Statistics (In Tons of 2,240 Pounds)		
	1955	1956	1957
Jan.	29,192	29,779	28,485
Feb.	28,814	29,568	26,276
Mar.	33,451	28,650	27,049
Apr.	27,741	25,348	24,247
May	29,237	27,922	.....
June	31,467	26,650	.....
July	23,695	23,826	.....
Aug.	23,261	18,867	.....
Sept.	30,080	25,470	.....
Oct.	29,460	27,784	.....
Nov.	31,516	27,713	.....
Dec.	28,683	24,134	.....
Total	346,597	315,711	.....

Mine Production of Zinc in United States

(U. S. Bureau of Mines)

	(In short tons)			Total U.S.*
	Eastern States	Central States	Western States	
1952				
Total	185,939	94,410	385,652	666,001
1953				
Total	183,612	57,300	293,818	534,730
1954				
Total	166,487	63,100	234,942	464,539
1955				
Dec.	12,644	5,250	21,721	39,615
Total	163,230	73,630	277,811	514,671
1956				
Jan.	13,830	5,263	22,073	41,166
Feb.	13,975	5,236	23,506	42,717
Mar.	15,058	5,740	26,975	47,773
Apr.	14,172	5,098	25,618	44,888
May	14,834	5,557	26,840	47,232
June	13,730	5,228	26,135	45,093
July	13,028	5,364	24,571	42,963
Aug.	14,559	5,425	25,453	45,437
Sept.	13,567	4,628	23,785	41,980
Oct.	17,439	4,815	26,607	48,861
Nov.	15,604	4,566	25,279	45,449
Dec.	15,513	4,160	24,411	44,084
Total	175,310	61,080	301,253	537,643
1957				
Jan.	18,586	4,916	25,864	49,186
Feb.	15,989	4,658	25,200	45,847
Mar.	17,834	5,156	27,430	50,420
Apr.	18,245	4,912	27,900	51,057

*Includes Alaskan output in some months.

Mine Production of Lead in United States

(U. S. Bureau of Mines)

	(In short tons)			Total U.S.*
	Eastern States	Central States	Western States	
1952				
Ttl.	11,252	150,302	228,607	390,161
1953				
Ttl.	9,970	136,650	188,776	335,412
1954				
Ttl.	8,608	138,940	169,804	317,352
1955				
Nov.	762	11,731	13,482	25,975
Dec.	771	13,628	13,403	27,802
Ttl.	10,379	145,640	177,409	333,409
1956				
Jan.	895	11,633	14,294	26,822
Feb.	1,141	12,100	15,009	28,250
Mar.	1,202	13,232	16,516	30,950
Apr.	1,028	11,948	16,329	29,705
May	1,091	12,497	16,787	29,975
June	897	11,492	17,092	29,481
July	749	11,459	15,761	27,969
Aug.	879	12,760	16,991	30,630
Sept.	868	10,632	15,915	27,415
Oct.	879	12,698	17,843	31,520
Nov.	862	10,779	16,862	28,503
Dec.	804	10,670	15,635	27,109
Ttl.	11,395	141,900	195,034	348,329
1957				
Jan.	1,002	12,513	16,714	30,229
Feb.	942	11,730	16,464	29,136
Mar.	968	11,875	18,022	30,865
Apr.	1,053	12,695	17,800	31,548

*Includes Alaskan output in some months.

Mine Production of Gold in United States

(U. S. Bureau of Mines)
(In fine ounces)

	Eastern States	Western States	Alaska*	Total
1952				
Ttl.	1,948	1,650,660	233,428	1,886,036
1953				
Ttl.	1,529	1,689,668	273,479	1,964,676
1954				
Ttl.	1,731	1,577,216	252,794	1,831,741
1955				
Ttl.	2,026	1,634,625	247,535	1,884,186
1956				
Jan.	121	131,872	7	132,000
Feb.	154	130,368	10	130,532
Mar.	198	134,421	55	134,674
Apr.	156	136,227	522	136,911
May	175	141,240	5,085	146,494
June	199	139,541	13,112	152,852
July	45	126,628	32,515	159,188
Aug.	178	136,812	45,529	182,519
Sept.	194	137,561	40,564	178,319
Oct.	194	130,665	35,901	166,760
Nov.	206	133,456	25,506	159,162
Dec.	178	129,139	5,506	134,817
Ttl.	1,998	1,607,930	204,300	1,814,228
1957				
Jan.	183	131,954	1,134	133,271
Feb.	153	118,122	1,197	119,472

* Alaska totals based on mint and smelter receipts.

U. S. Silver Production*

(A.B.M.S.)

(In thousands of ounces; commercial bars, 0.999 fine, and other refined forms)

	Domestic	Foreign	Total
1952 Total	40,245	36,653	76,898
1953 Total	34,697	37,764	72,461
1954 Total	38,059	39,422	77,481
1955			
October	2,432	3,889	6,321
November	3,087	2,775	5,862
December	3,180	3,652	6,832
Total	33,101	32,780	65,881
1956			
January	3,249	4,159	7,408
February	3,615	4,033	7,648
March	3,790	3,550	7,340
April	2,898	3,191	6,089
May	2,905	3,709	6,614
June	2,501	2,248	4,749
July	3,828	2,838	6,666
August	3,035	3,818	6,853
September	2,828	3,002	5,830
October	3,454	3,125	6,579
November	2,886	2,685	5,571
December	3,168	3,802	6,970
Total	38,157	40,160	78,317
1957			
January	2,997	2,877	5,874
February	2,925	2,876	5,801
March	3,360	3,166	6,526

* The separation between silver of foreign and domestic origin on the basis of refined bars and other refined forms is only approximate.

† Includes purchases of crude silver by the U. S. Mint.

Mine Production of Recoverable Silver in United States

(U. S. Bureau of Mines)

	(In Fine Ounces)			
	Eastern States	Missouri	Western States	Alaska*
1953 Total	158,707	223,500	36,354,685	39,111
1954 Total	142,180	283,600	36,121,368	35,140
1955 Total	159,038	438,000	36,103,723	33,804
1956				
January	39,653	30,890	2,816,552	1
February	47,071	32,430	2,918,233	3
March	51,867	34,370	3,095,221	8
April	43,270	32,050	3,196,813	61
May	46,770	33,300	3,063,179	770
June	46,753	30,610	3,097,297	1,595
July	51,664	31,160	2,697,372	4,171
August	45,914	35,180	3,239,671	6,333
September	46,305	28,700	2,925,332	5,666
October	42,808	34,510	3,288,177	4,942
November	46,379	29,000	3,009,312	2,400
December	45,528	25,000	2,759,108	750
Total	553,982	377,200	36,169,267	26,700
1957				
January	12,538	19,400	3,156,768	175
February	11,433	18,660	2,947,444	228

*Alaska totals based on mint and smelter receipts.

Production of Primary Aluminum in the U. S.

(U. S. Bureau of Mines)

	(In short tons)					
	1950	1951	1952	1953	1954	1955
Jan.	50,023	67,954	76,934	89,895	116,247	128,203
Feb.	54,493	62,740	72,374	92,649	110,483	116,236
Mar.	58,747	70,022	77,069	104,460	122,339	130,272
Apr.	58,024	67,701	76,880	102,071	120,434	126,394
May	51,929	67,720	80,803	105,464	125,138	131,128
June	60,400	67,454	77,476	104,152	120,758	127,634
July	63,518	72,698	78,368	109,285	126,161	132,669
Aug.	63,006	73,816	85,175	110,545	125,296	133,551
Sept.	54,449	69,429	76,882	109,333	120,332	130,606
Oct.	62,915	72,647	77,312	108,219	125,089	134,655
Nov.	62,276	72,246	74,639	105,636	121,252	133,689
Dec.	65,897	72,454	83,419	110,291	127,056	140,748
Total	718,622	836,881	937,330	1,252,013	1,460,565	1,565,721

Average Silver Prices

(Cents per fine ounce)

	1954	1955	1956	1957
Jan.	85.25	85.25	90.357	91.375
Feb.	85.25	85.25	90.90	91.375
Mar.	85.25	85.25	91.138	91.375
Apr.	85.25	87.08	90.875	91.375
May	85.25	88.928	90.75	91.307
June	85.25	89.71	90.46	
July	85.25	90.49	90.14	
Aug.	85.25	90.75	90.614	
Sept.	85.25	90.795	90.75	
Oct.	85.25	91.794	90.722	
Nov.	85.25	91.46	91.375	
Dec.	85.25	90.45	91.375	
Ave.	85.25	89.116	90.79	

Note — The averages are based on the price of refined bullion imported on or after August 31, 1943.

U. S. Copper Imports

(A.B.M.S.) (Bureau of the Census)

	1957		
	Feb.	Mar.	Apr.
(In tons of 2,000 lbs.)			
Ore, matte & regulus (cont.)	10,131	9,737	13,265
Canada	1,383	2,953	2,778
Mexico	594	425	866
Cuba	1,184	2,108	182
Argentina	191	...	...
Bolivia	472	467	...
Chile	1,131	1,598	3,428
Peru	1,249	958	1,339
Philippines	3,656	3	2,223
U. of S. Africa	...	1,097	2,392
Australia	271	127	55
Other countries	...	1	2
Blister copper	...	...	...
(content)	18,217	29,081	32,558
Mexico	1,519	3,539	5,829
Chile	14,466	18,161	25,434
Peru	...	1,453	549
N. Rhodesia	...	5,186	746
U. of S. Africa	745	...	...
Australia	1,487	742	...
Refined cathodes	...	...	...
and shapes	14,190	16,155	11,815
Canada	10,009	6,904	7,486
Chile	649	794	1,909
Peru	1,428	500	599
Belgium	...	448	...
Belg. Congo	1,700	1,848	1,549
N. Rhodesia	404	5,661	272
Total Imports:	...	...	...
Crude & refined	42,538	54,973	57,638
Old and scrap	...	...	...
(content)	258	182	240
Composition metal	...	...	...
(content)	27	36	12
Brass scrap & old (cu. cont.)	292	184	333

U. S. Zinc Exports

(A.B.M.S.) (Bureau of the Census)
(In tons of 2,000 lbs.)

	1957		
	Feb.	Mar.	Apr.
Slabs, blocks, etc.	503	987	1,200
Mexico	...	...	74
Argentina	6	...	...
Belgium	280	560	112
Germany (W.)	...	...	84
Netherlands	...	...	224
U. Kingdom	196	336	672
Korea	21	64	32
Other countries	...	27	2
Total Exports:	...	...	...
Ore, conc.,	...	...	...
slabs, block	503	987	1,200
Scrap: Ashes,	...	...	...
dross and skim.	471	706	373
Rolled in sheets,	...	...	...
plates & strips†	248	334	238
Alloys ex brass	...	...	...
and bronze	17	1	...
Die castings	133	107	106
Battery shells & parts, unassem.	...	7	6
Chromite zinc sheets, mold, castings, pattern plates, forms n.e.s.	65	8	60

U. S. Copper Exports

(A.B.M.S.) (Bureau of the Census)

	1957		
	Feb.	Mar.	Apr.
(In tons of 2,000 lbs.)			
Ore, conc., matte, and other unrefined (cont.)	1,407	1,972	1,340
Refined ingots, bars, etc.†	29,769	41,376	32,315
Canada	193	128	135
Brazil	471	1,067	1,306
Uruguay	...	...	220
Belgium	...	21	...
Denmark	...	560	...
France	2,937	6,213	6,722
Germany (W.)	1,646	6,431	4,306
Italy	3,282	2,830	3,563
Netherlands	616	592	2,272
Norway	...	497	700
Sweden	...	224	392
Switzerland	811	3,240	1,138
U. Kingdom	7,805	10,608	6,702
Yugoslavia	...	...	55
India	168	335	112
Japan	11,613	8,083	4,320
U. of S. Africa	49	226	74
Australia	...	280	280
Other countries	173	36	18
Total Exports:	...	...	...
Crude & refined	31,176	43,348	33,655
Pipes and tubes	156	57	70
Plates and sheets	11	17	21
Rods	60	117	236
Brush-copper, castings, rolls segments (finished forms)	...	...	...
n.e.s.	20	20	22
Wire, bare	936	1,402	1,004
Building wire and cable	227	455	286
Weatherproof wire†	38	77	71
Insulated copper wire n.e.s.	783	1,283	1,049

U. S. Copper Scrap Exports

(A.B.M.S.) (Bureau of the Census)
(In tons of 2,000 lbs.)

	1957		
	Feb.	Mar.	Apr.
Copper scrap, unalloyed (new and old)†	4,682	5,393	9,137
Canada	704	950	579
Belgium	...	...	27
France	138	619	552
Germany (W.)	1,087	1,275	2,328
Netherlands	...	28	55
Sweden	...	...	164
Switzerland	14	...	55
U. Kingdom	...	...	385
India	...	27	165
Japan	2,675	2,398	4,677
Other countries	64	96	150
Copper-base scrap, alloyed† (new & old)	6,523	10,315	8,579
Canada	4	30	...
Belgium	110	181	138
France	111	435	461
Germany (W.)	1,404	2,832	2,784
Italy	1,260	1,331	909
Netherlands	...	129	104
Portugal	...	119	39
Spain	...	11	6
Switzerland	22	30	28
U. Kingdom	253	65	182
India	305	518	535
Japan	3,017	4,551	3,333
Hong Kong	27	82	60
Other countries	10	1	...

† Ash, brass mill, clippings, dross, flue dust, residues, scale, skimmings, wire scrap.
‡ Copper-base alloys, including brass and bronze—Ashes, clippings for remanufacture, cupro-ni kel scrap, cupro-nickel trimmings, nickel silver scrap, phosphor bronze, phosphor copper, skimmings, turnings, round.

U. S. Lead Imports

(A.B.M.S.) (Bureau of the Census)
(In tons of 2,000 lbs.)

	1957		
	Feb.	Mar.	Apr.
Ore, matte, etc. (content)	11,104	18,045	16,786
Canada	1,423	2,596	1,782
Mexico	327	170	531
Guatemala	1,014	571	793
Honduras	176	168	80
Bolivia	602	2,691	...
Chile	...	...	29
Peru	3,259	4,680	4,768
U. of S. Africa	...	3,519	8,049
Australia	4,238	3,522	708
Philippines	...	82	...
Other countries	65	46	46
Pigs and bars	22,423	20,784	25,069
Canada	3,648	2,632	3,711
Mexico	4,824	9,241	4,886
Peru	1,816	2,500	1,814
Denmark	56	...	4
Spain	772	55	...
Yugoslavia	4,852	1,533	431
Morocco	...	...	4,304
Australia	6,455	4,823	9,919
Total Imports:	...	...	...
Ore, base bullion, refined	33,527	38,829	41,855
Lead scrap, dross, etc. (cont.)	831	449	421
Antimonial lead & typemetal	416	629	280
Lead content thereof	398	585	248

U. S. Zinc Imports

(A.B.M.S.) (Bureau of the Census)
(In tons of 2,000 lbs.)

	1957		
	Feb.	Mar.	Apr.
Zinc ore (content)	41,314	42,296	45,630
Canada	10,810	11,329	13,220
Mexico	17,178	15,302	13,735
Cuba	150	91	155
Guatemala	1,063	801	626
Honduras	98	635	61
Bolivia	21	523	497
Chile	682	...	103
Peru	10,770	12,698	14,644
U. of S. Africa	...	466	2,347
Australia	535	422	231
Philippines	...	13	...
Other countries	7	16	11
Zinc blocks, pigs, etc.	24,287	22,761	30,036
Canada	12,287	8,292	7,712
Mexico	2,218	390	1,481
Peru	602	326	6,727
Austria	220	...	220
Belgium	3,226	3,238	2,244
Germany (W.)	331	277	2,269
Italy	414	1,489	1,490
Netherlands	608	...	...
U. Kingdom	...	...	1,120
Yugoslavia	1,157	1,433	2,756
Belg. Congo	1,003	4,134	1,215
Rhodesia	...	1,624	...
Australia	1,568	1,120	2,802
Japan	653	401	...
Other countries	...	37	...
Total Imports:	...	...	...
Zinc ore, blocks, pigs	65,601	65,057	75,666
Dross and skim.	17	...	2
Old and worn out	3	35	...

Comparative Metal Prices

	Av. 1939	OPA Av. 1946	1957
Copper Domestic (Electro, Del. Valley)	11.20	14.375	29.00
Lead (N. Y.)	5.05	8.25	14.00
P. W. Zinc (E. St. Louis, f.o.b.)	5.05	5.05	10.50
New York, del.	...	...	11.00
Tin, Spot Straits, N. Y.	...	...	97.875
Aluminum Ingot 99%+	20.00	15.00	27.10
Antimony (R.M.M. brand, f. o. b. Laredo)	12.36	14.50	33.00

World Production of Copper (American Bureau of Metal Statistics) (In Tons of 2,000 Pounds)

	United States	Canada	Mexico (crude)	Chile	Peru	Fed. Rep. of Germany	Norway	United Kingdom	Yugo-slavia	India	Japan	Turkey	Australia	Northern Rhodesia	Union of South Africa
	(a)	(b)	(c)	(d)	(d)	(e)	(f)	(g-h)	(c)	(f-h)	(e)	(f)	(c)	(c)	(d)
1951 Total	964,589	269,971	60,511	396,937	25,495	234,647	.....	.....	.....	.....	100,254	.....	16,984	349,667	36,104
1952 Total	961,886	258,868	60,874	422,493	22,640	206,747	11,206	163,968	36,176	7,009	104,060	2,546	21,119	336,883	87,459
1953 Total	957,318	253,652	63,380	371,742	25,803	233,330	13,306	108,604	34,381	5,709	100,381	25,641	37,080	382,884	38,341
1954 Total	863,721	302,984	59,030	372,814	29,233	258,259	14,205	152,858	33,394	8,274	117,371	27,727	42,241	386,577	43,153
1955 Total	1,036,702	326,599	61,583	447,288	35,478	286,805	14,876	138,271	31,151	8,432	124,908	26,313	41,935	350,302	47,176
1956															
Feb.	89,326	26,867	4,965	37,420	2,492	21,106	1,269	11,437	1,872	792	11,029	2,477	4,331	33,545	2,924
Mar.	102,459	31,659	7,107	38,356	2,500	23,888	1,322	12,281	2,313	821	10,390	3,074	5,991	32,536	3,773
Apr.	98,578	27,804	6,436	39,731	2,474	22,593	1,402	8,154	1,660	761	9,927	2,355	6,443	30,789	3,105
May	101,422	29,422	5,801	39,954	2,612	23,134	1,415	10,217	3,103	755	11,923	2,443	4,477	33,577	4,835
June	98,496	29,097	5,614	36,812	2,412	23,920	1,413	9,715	3,018	687	12,490	2,628	4,461	33,640	4,461
July	84,787	31,141	5,109	40,880	2,602	24,383	1,186	12,223	3,197	740	12,570	1,044	4,589	33,279	3,090
Aug.	91,282	28,719	5,357	44,202	2,523	24,006	1,251	6,733	3,323	782	12,443	1,584	4,841	33,720	4,715
Sept.	88,659	31,196	5,609	41,475	.....	24,022	1,510	11,281	3,028	785	12,015	2,298	4,207	26,917	4,307
Oct.	95,109	29,977	6,488	47,346	.....	24,405	1,733	11,127	3,020	757	12,477	2,754	4,497	42,381	4,868
Nov.	90,573	29,837	5,871	46,407	.....	22,156	1,344	11,426	2,733	702	10,648	2,717	5,252	38,800	4,170
Dec.	92,231	30,422	5,521	44,911	838	21,989	1,293	9,174	2,687	786	11,593	2,064	4,717	38,892	4,299
1957															
Jan.	94,873	26,053	5,592	44,697	2,276	21,990	1,399	11,528	2,697	440	12,493	.....	4,647	36,363	3,744
Feb.	92,508	29,020	4,633	.....	2,185	20,736	956	11,178	2,586	768	12,868	.....	4,088	35,251	.....
Mar.	96,363	30,508	5,688	.....	2,582	24,554	.....	11,651	.....	850	.....	.....	.....	43,471	.....
Apr.	98,856	.....	.....	.....	2,498	.....	.....	.....	.....	.....	.....	.....	.....	37,605	.....

(a) Reported by Copper Institute. Crude, "recoverable contents of mine production or smelter production or shipments, and custom intake". Does not include intake of scrap nor of imported ore except that received from Cuba and Philippines. (b) Blister copper plus recoverable copper in concentrates, matte, etc., exported. (c) Crude copper, i. e., copper content of blister or converter copper as originally produced in the several countries, although some of it may be refined at home; e. g., in Rhodesia. (d) Blister and/or refined. (e) Refined. There are quantities of scrap included in the electrolytic production in addition to that reported, tonnage of which is not obtainable. (f) Smelter production. (g) Refinery production from imported blister only. (h) British Bureau of Non-Ferrous Metal Statistics. * Refined.

World Production of Refined Lead (American Bureau of Metal Statistics) (In Tons of 2,000 Pounds)

	United States	Canada	Mexico	Peru	Belgium	France	Fed. Rep. of Germany	Italy	Spain	Yugo-slavia	Japan	Australia (a)	French Morocco	Tunisia	Rhodesia	Total
1951 Total	486,874	162,712	219,352	48,824	77,873	53,831	170,766	39,683	45,460	.....	18,516	217,301	20,287	25,476	15,646	1,602,691
1952 Total	532,778	183,389	248,551	53,536	83,139	59,607	152,751	38,504	46,060	74,053	20,882	217,298	31,224	28,264	14,112	1,783,648
1953 Total	538,883	166,356	225,075	66,520	84,162	60,887	164,077	40,786	53,799	78,038	25,613	241,419	29,970	30,397	12,891	1,813,778
1954 Total	551,618	166,379	231,595	63,735	79,280	71,083	162,773	11,150	62,475	78,555	37,612	260,424	29,417	30,015	16,800	1,877,841
1955 Total	547,153	148,811	221,133	67,303	91,241	73,251	162,508	46,806	67,509	83,347	40,912	254,558	28,870	28,620	17,976	1,893,125
1956																
Feb.	49,476	11,469	16,510	6,497	9,446	6,241	15,743	3,688	5,202	4,708	4,239	16,392	4,572	1,307	1,232	157,173
Mar.	54,174	12,438	17,376	6,142	9,338	6,883	14,562	3,164	5,319	7,187	4,009	19,535	3,505	2,500	1,680	167,740
Apr.	52,976	11,554	16,186	6,790	8,650	6,276	14,398	3,799	6,118	7,159	4,136	17,407	2,056	2,273	1,466	161,329
May	47,961	11,990	17,611	6,970	9,188	6,814	14,022	4,511	5,660	5,786	4,142	15,984	798	2,372	1,456	156,551
June	47,367	11,591	18,091	6,779	9,481	6,704	14,302	3,100	4,767	7,246	3,972	19,664	.....	2,064	1,456	167,830
July	48,479	12,374	18,515	6,415	9,965	6,377	12,165	3,887	5,195	7,827	4,202	27,935	2,876	1,841	1,436	170,426
Aug.	48,404	12,196	18,890	6,192	9,372	1,896	11,586	2,440	4,724	7,546	4,126	19,757	4,151	1,933	1,400	155,065
Sept.	53,530	12,706	18,567	6,378	9,213	6,071	13,671	2,833	5,962	6,182	4,614	23,654	3,630	2,970	1,344	172,788
Oct.	54,815	13,923	20,169	2,237	9,243	7,212	16,873	4,600	6,002	8,237	4,271	26,243	2,490	2,389	1,400	181,423
Nov.	50,744	12,914	17,934	9,312	7,883	17,679	3,319	5,343	7,632	4,494	23,220	.....	2,180	1,232	1,652,282	
Dec.	54,062	12,531	17,088	5,787	9,540	1,797	17,094	3,667	5,113	7,747	4,885	22,263	1,948	2,724	1,344	169,392
1957																
Jan.	50,854	10,117	19,212	5,676	9,971	8,084	16,540	3,196	5,389	6,195	4,928	21,498	4,052	1,261	1,344	169,640
Feb.	48,012	11,192	18,574	5,736	9,969	7,970	14,516	3,519	3,980	6,213	4,836	17,060	3,779	2,544	1,232	159,957
Mar.	52,357	.....	17,873	6,431	.....	8,193	16,420	3,574	6,031	.....	.....	.....	2,215	2,817	1,120	.....
Apr.	56,170	.....	20,235	5,915	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,400	.....

(a) Production credited to Australia includes lead refined in England from Australian base bullion.

World Production of Slab Zinc (American Bureau of Metal Statistics) (In Tons of 2,000 Pounds)

	United States	Can.	Mexico	Peru	Belgium	France	Fed. Rep. of Germany	Great Britain	Italy	Nether-lands	Norway	Spain	Yugo-slavia	Japan	Australia (a)	Rhodesia (b)	Total
	(a)	(b)	(b-c)	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(b)	(a)	(a)	(a)	(b)	(b)	(d)
1951 Total	931,833	218,548	67,990	1,003	220,479	82,184	155,024	78,101	52,058	24,924	44,971	23,444	.....	62,109	88,103	25,301	2,048,216
1952 Total	961,430	225,140	61,456	5,491	205,909	88,255	162,272	74,981	60,438	28,555	43,061	28,829	15,943	77,208	97,931	25,687	2,141,088
1953 Total	971,191	247,707	59,689	9,819	213,215	89,218	168,430	81,435	65,730	27,721	42,566	24,162	16,937	86,833	101,008	28,970	2,228,917
1954 Total	868,242	218,810	60,477	16,952	234,896	122,248	184,806	90,987	74,366	28,686	48,768	25,109	15,040	112,292	117,066	29,736	2,148,591
1955 Total	1,031,018	257,008	61,879	18,943	233,623	123,623	197,024	90,917	77,761	31,202	49,724	26,244	15,175	122,965	113,221	31,248	2,533,879
1956																	
Feb.	86,829	20,356	4,949	963	20,589	9,911	15,598	7,684	5,799	2,777	3,961	2,038	1,144	10,337	8,982	2,688	208,693
Mar.	91,690	22,010	5,333	1,980	20,710	9,491	16,839	9,351	6,355	2,653	4,331	2,166	1,296	11,702	9,572	2,688	224,827
Apr.	85,664	21,839	5,207	1,220	20,687	10,819	16,689	7,382	6,613	2,693	4,002	2,172	1,222	13,806	9,243	2,688	218,363
May	81,238	21,790	5,248	1,225	21,800	11,174	17,212	6,719	7,190	2,662	4,168	2,226	1,289	13,401	10,012	2,688	214,194
June	78,321	20,780	5,142	1,459	21,030	11,003	16,898	8,857	6,270	2,530	4,427	2,175	1,282	12,466	8,606	2,632	208,635
July	83,080	21,691	5,198	1,285	21,015	10,679	17,964	6,617	6,433	2,637	4,688	2,047	1,325	13,089	11,141	2,800	216,200
Aug.	89,549	21,354	5,154	1,427	20,996	10,846	17,633	6,925	6,995	2,543	4,826	1,915	1,420	12,385	10,032	2,464	221,801
Sept.	90,235	20,691	5,018	.....	21,207	10,210	17,187	9,130	6,817	2,452	4,487	1,918	1,287	12,674	9,866	2,744	220,868
Oct.	93,493	21,412	5,257	.....	21,153	8,871	17,428	6,773	7,334	2,718	4,743	2,110	1,244	13,497	10,171	2,800	224,159
Nov.	91,808	20,470	5,060	.....	21,044	9,257	16,851	6,443	7,037	2,727	4,538	2,087	1,414	12,717	9,810	2,716	219,916
Dec.	92,234	22,012	5,291	880	21,816	10,088	17,835	8,135	7,249	2,745	4,654	2,151	1,425	11,819	10,257	2,856	233,029
1957																	
Jan.	93,452	20,340	5,357	1,560	22,466	11,464	17,701	6,360	6,944	2,922	4,424	1,896	2,734	11,361	10,166	2,856	.....
Feb.	88,078	19,898	4,788	2,346	22,354	10,571	15,903	6,256	6,186	2,552	3,851	1,694	2,447	10,632	9,133	2,520	.....
Mar.	96,924	21,942	5,334	2,352	.....	12,249	17,627	8,537	6,710	.....	4,478	2,124	.....	.....	.....	2,352	.....
Apr.	96,506	20,504	.....	2,380	.....	.....	.....	6,802	.....	.....	4,252	.....	.....	.....	.....	2,744	.....

(a) Partially electrolytic. (b) Entirely electrolytic. (c

U. K. Virgin Copper Stocks

(In long tons)

British Bureau of Non-Ferrous Metal Statistics

At start of:	1955	1956	1957
Jan.	61,480	76,197	59,614
Feb.	62,771	79,377	59,203
Mar.	70,185	71,634	62,120
Apr.	67,566	73,776	61,779
May	60,767	76,481	71,101
June	58,546	71,713	.....
July	64,256	76,188	.....
Aug.	99,628	68,197	.....
Sept.	107,261	72,069	.....
Oct.	93,681	62,327	.....
Nov.	75,533	58,893	.....
Dec.	77,749	55,838	.....

U. K. Refined Lead Stocks

(British Bureau of Non-Ferrous Metal Statistics)

(In long tons)

At start of:	1955	1956	1957
Jan.	31,173	40,987	39,420
Feb.	32,274	34,326	41,433
Mar.	39,461	29,693	36,900
Apr.	37,587	33,974	34,877
May	45,226	29,479	44,933
June	38,760	30,537	.....
July	30,816	37,088	.....
Aug.	32,270	35,432	.....
Sept.	48,036	35,793	.....
Oct.	42,912	39,391	.....
Nov.	42,061	32,662	.....
Dec.	38,410	32,025	.....

U. K. Stocks of Zinc

(British Bureau of Non-Ferrous Metal Statistics)

(In tons of 2,240 lbs.)

At start of:	1956	1957	1956	1957
Jan.	49,962	44,816	54,447	53,274
Feb.	45,239	40,501	49,537	63,366
Mar.	44,288	38,927	48,667	59,957
Apr.	49,194	41,260	40,502	55,698
May	49,129	37,540	36,524	52,871
June	47,266	.....	40,136	.....
July	47,644	.....	40,763	.....
Aug.	49,169	.....	47,972	.....
Sept.	51,946	.....	57,125	.....
Oct.	50,978	.....	55,354	.....
Nov.	47,364	.....	54,376	.....
Dec.	46,364	.....	55,223	.....

U. K. Copper Exports

(British Bureau of Non-Ferrous Metal Statistics)

(In tons of 2,240 lbs.)

	1955	1956	1957
(Gross Weight)			
Copper,			
unwrought,			
ingots, blocks,			
slabs, bars, etc.	3,716	4,766	3,512
Plates, sheets,			
rods, etc.	4,556	3,488	2,447
Wire (including			
uninsulated			
electric wire)	4,816	6,011	4,920
Tubes	1,138	1,081	930
Other copper			
worked (incl.			
pipe fittings)	132	108	89
Total	14,358	15,454	11,898

Copper Consumption in United Kingdom

British Bureau of Non-Ferrous Metal Statistics

(In tons of 2,240 pounds)

	Unalloyed	Alloyed*	Total	Virgin	Scrap
1953 Total	243,717	192,337	447,260	322,311	124,949
1954 Total	328,149	251,989	580,138	448,413	131,725
1955 Total	377,576	281,953	659,529	496,467	163,062
1956					
February	33,213	24,163	57,376	40,934	16,442
March	32,903	24,366	57,269	43,913	13,356
April	27,489	21,029	48,518	36,418	12,100
May	29,545	22,295	52,140	41,747	10,393
June	33,774	21,810	55,584	43,622	11,962
July	31,752	19,316	51,066	39,149	11,919
August	24,426	14,434	38,860	30,065	8,795
September	35,203	19,584	54,787	45,807	8,980
October	36,824	21,275	58,099	47,814	10,285
November	38,244	21,142	59,386	47,144	12,242
December	29,927	17,437	47,364	38,505	8,859
Total	388,167	251,312	639,479	500,794	138,685
1957					
January	40,014	21,574	61,588	51,118	10,470
February	36,191	19,849	56,040	43,326	12,714
March	33,537	19,895	53,432	42,787	10,645
April	33,744	18,124	51,868	40,940	10,928

*Includes copper sulphate effective October, 1954.

U. K. Zinc Imports

(British Bureau of Non-Ferrous Metal Statistics)

(In tons of 2,240 lbs.)

	1955	1956	1957
(Gross Weight)			
Feb.			
Mar.			
Apr.			
Zinc ore and concentrates	3,167	7,636	8,203
Zinc conc.	2,958	4,269	+
Australia	2,508	3,975	.....
N. Rhodesia	450	.....	.....
Turkey	.....	294	.....
Zinc and zinc alloys	10,948	13,876	13,955
N. Rhodesia	200	250	200
Australia	.....	1,100	750
Canada	4,627	6,048	6,016
Belgium	2,340	1,942	1,747
Germany (W.)	901	351	58
Netherlands	113	163	25
Norway	.....	250	.....
United States	300	.....	306
Other countries	2,467	3,772	4,853
Of which:			
Zinc or spelter, unwrought in ingots, blocks, bars, slabs and cakes	10,948	13,877	13,955

+ Not available.

Zinc Imports and Exports By Principal Countries

(A. B. M. S.)

Reported in pigs, bars, etc.; metric tons except where otherwise noted.

	1955	1956	1957
IMPORTS			
Jan.			
Feb.			
Mar.			
U. S. (s.t.)	27,493	24,287	22,761
Canada (s.t.)	2	.....	.....
Denmark	418	914	160
France	532	579	1,071
Italy	498	.....	.....
Netherlands	1,045	422	.....
Sweden	3,149	1,078	.....
Switzerland	1,632	979	1,784
U. K. (l.t.)	10,017	10,948	13,876
India* (l.t.)	884	4,443	.....
EXPORTS			
U. S. (s.t.)	496	503	987
Canada (s.t.)	19,304	16,618	14,923
Denmark	39	25	25
France	56	2	51
Italy	956	.....	.....
Netherlands	2,205	554	.....
Norway	3,553	5,617	.....
Switzerland	587	797	255
U. K.† (l.t.)	353	262	289
Northern Rhodesia* (l.t.)	1,971	2,834	2,640
Australia* (l.t.)	4,211	6,942	.....

* Includes scrap.

† Includes manufactures.

* British Bureau of Non-Ferrous Metal Statistics.

United Kingdom Tin Statistics

(British Bureau of Non-Ferrous Metal Statistics)

United States Bureau of Non-Ferrous Metal Statistics								
Tin Content of Tin in Ore				Tin Metal				
	Imports	Production*	Stock at end of period*	Imports	Production*	Consumption*	Exports & Re-exports	Stock at end of period*
1955 Total	27,084	1,034	2,181	1,227	27,241	22,390	8,924	2,999
1956								
March	2,526	94	2,705	730	2,452	1,825	237	3,804
April	2,045	76	2,341	155	1,924	1,692	475	3,638
May	1,650	81	1,861	39	2,455	2,301	1,013	3,438
June	1,647	74	1,240	69	2,860	1,803	457	3,424
July	3,100	111	2,240	173	2,082	1,854	405	3,460
August	2,691	48	2,713	20	1,931	1,577	533	3,784
September	934	83	1,277	247	2,575	1,903	1,153	3,274
October	3,396	101	2,561	73	2,272	2,223	953	2,737
November	2,034	88	2,308	445	2,293	1,997	511	3,436
December	2,305	91	2,393	131	2,118	1,649	686	3,175
1956 Total	26,571	1,044	2,393	2,226	26,434	22,232	8,371	3,175
1957								
January	3,584	105	3,359	25	2,519	2,134	863	2,878
February	2,468	80	2,812	25	2,688	1,936	800	3,169
March	4,342	85		66	2,835	1,878	863	3,450

*As reported by International Tin Study Group. Production of Tin Metal includes production from imported scrap and residues refined on toll. Stocks exclude strategic stock but include official warehouse stocks.

Canada's Copper Output

(Dominion Bureau of Statistics)

(Refined Copper)				
(In Tons)				
1954	1955	1956	1957	
Jan. . . 15,001	22,600	26,653	25,469	
Feb. . . 13,954	21,455	26,229	21,861	
Mar. . . 21,075	25,083	26,750	27,664	
Apr. . . 20,412	24,077	26,617	....
May . . 23,012	23,840	27,626	....
June . . 23,344	21,890	27,122	....
July . . 21,582	21,185	27,250	....
Aug. . . 22,000	26,184	29,219	....
Sept. . . 22,684	24,752	27,950	....
Oct. . . 21,661	25,546	29,696	....
Nov. . . 22,981	25,213	27,346	....
Dec. . . 24,935	27,172	28,716	....
Year	252,643	288,987	331,174	....

Canada's Lead Exports

(Dominion Bureau of Statistics)

(In Pigs)				
(In Tons)				
1954	1955	1956	1957	
Jan. . . 6,170	5,500	4,888	8,946	
Feb. . . 7,560	11,882	3,856	6,633	
Mar. . . 11,092	10,318	4,007	7,044	
Apr. . . 9,606	11,967	7,636	....
May . . 11,483	6,416	7,214	....
June . . 12,018	9,897	6,632	....
July . . 13,152	8,341	9,696	....
Aug. . . 8,646	4,884	4,713	....
Sept. . . 10,045	5,538	9,908	....
Oct. . . 8,005	8,053	9,072	....
Nov. . . 10,817	4,622	9,227	....
Dec. . . 7,815	5,286	2,734	....
Year	116,406	92,407	79,633	....

Canada's Silver Exports

(Dominion Bureau of Statistics)

(In ores and concentrates)				
(Fine Ounces)				
1955	1956	1957		
Jan. . . 429,704	435,047	1,070,285		
Feb. . . 457,261	196,803	1,039,491		
Mar. . . 411,597	328,857	1,192,826		
Apr. . . 493,578	348,838	....	
May . . 445,054	447,710	....	
June . . 592,238	495,742	....	
July . . 285,350	686,209	....	
Aug. . . 644,932	1,080,301	....	
Sept. . . 636,992	481,042	....	
Oct. . . 684,301	731,099	....	
Nov. . . 387,147	669,285	....	
Dec. . . 405,719	1,023,481	....	
Year	5,873,873	6,924,414	....

Canada's Copper Exports

(Ingots, bars, slabs and billets)

(In Tons)				
1954	1955	1956	1957	
Jan. . . 9,081	11,078	15,981	20,582	
Feb. . . 8,385	12,897	11,041	16,272	
Mar. . . 11,671	12,423	12,276	14,720	
Apr. . . 11,218	10,321	14,476	....
May . . 18,407	10,911	12,851	....
June . . 14,877	13,387	10,985	....
July . . 15,467	12,674	13,599	....
Aug. . . 14,158	13,219	14,710	....
Sept. . . 14,069	13,479	17,268	....
Oct. . . 11,528	14,208	13,896	....
Nov. . . 13,372	14,545	19,130	....
Dec. . . 13,897	14,057	18,630	....
Year	156,130	153,199	174,843	....

Canada's Zinc Output

(Dominion Bureau of Statistics)

(Refined Zinc)				
(In Tons)				
1954	1955	1956	1957	
Jan. . . 17,155	22,028	21,696	20,340	
Feb. . . 15,199	19,865	20,356	19,808	
Mar. . . 16,550	22,215	22,010	21,941	
Apr. . . 16,249	21,301	21,339	....
May . . 16,530	21,599	21,790	....
June . . 17,017	20,565	20,780	....
July . . 17,917	21,769	21,691	....
Aug. . . 18,755	22,029	21,354	....
Sept. . . 18,023	20,898	20,691	....
Oct. . . 18,871	22,206	21,412	....
Nov. . . 19,662	21,398	20,470	....
Dec. . . 21,922	21,135	22,012	....
Year	213,810	257,008	255,601	....

Canada's Silver Output

(Dominion Bureau of Statistics)

(In Ounces)				
1955	1956	1957		
Jan. . . 2,182,386	2,280,575	2,142,746		
Feb. . . 1,960,506	2,094,467	2,004,525		
Mar. . . 2,413,591	2,296,648	2,307,502		
Apr. . . 2,304,287	1,759,384	....	
May . . 2,235,620	2,463,374	....	
June . . 2,461,675	2,494,748	....	
July . . 2,385,654	2,267,271	....	
Aug. . . 2,480,607	2,315,312	....	
Sept. . . 2,386,385	2,517,451	....	
Oct. . . 2,371,890	2,379,162	....	
Nov. . . 2,088,991	2,429,547	....	
Dec. . . 2,388,627	2,357,202	....	
Year	27,696,319	27,655,141	....

Canada's Lead Output

(Dominion Bureau of Statistics)

(Recoverable Lead) *				
(In Tons)				
1954	1955	1956	1957	
Jan. . . 17,716	18,959	16,002	14,032	
Feb. . . 16,863	15,018	14,344	15,170	
Mar. . . 17,104	19,113	16,857	16,940	
Apr. . . 19,452	17,889	11,573	....
May . . 19,953	16,808	15,446	....
June . . 18,988	17,800	18,145	....
July . . 19,164	16,650	15,841	....
Aug. . . 18,237	16,676	16,104	....
Sept. . . 17,066	15,972	15,760	....
Oct. . . 16,569	13,658	16,725	....
Nov. . . 18,365	15,182	14,865	....
Dec. . . 19,093	17,857	16,056	....
Year	219,280	201,583	188,971	....

* New base bullion from Canadian ores plus recoverable lead in ores or concentrates shipped for export.

Canada's Zinc Exports

(Dominion Bureau of Statistics)

(Slabs in Tons)				
1954	1955	1956	1957	
Jan. . . 16,625	22,181	15,550	19,304	
Feb. . . 11,328	25,556	11,757	16,618	
Mar. . . 18,199	20,178	8,822	14,923	
Apr. . . 17,926	21,018	14,317	....
May . . 13,926	14,820	11,357	....
June . . 15,654	19,581	15,296	....
July . . 27,582	13,522	15,499	....
Aug. . . 14,934	16,581	13,070	....
Sept. . . 17,298	11,793	19,732	....
Oct. . . 13,064	19,836	20,792	....
Nov. . . 16,224	14,164	21,411	....
Dec. . . 23,277	14,607	16,125	....
Year	206,037	213,837	183,728	....

Canada's Nickel Output

(Dominion Bureau of Statistics)

(In Tons)				
1954	1955	1956	1957	
Jan. . . 12,765	14,387	14,985	16,609	
Feb. . . 11,874	13,375	14,997	15,027	
Mar. . . 13,619	15,544	15,504	16,733	
Apr. . . 13,015	15,011	14,431	....
May . . 13,458	15,352	15,203	....
June . . 13,269	14,835	14,492	....
July . . 12,901	14,530	15,125	....
Aug. . . 13,428	14,825	14,852	....
Sept. . . 13,521	13,734	14,530	....
Oct. . . 14,323	14,411	15,762	....
Nov. . . 14,159	14,290	15,062	....
Dec. . . 14,947	14,881	14,824	....
Year	161,279	175,173	178,767	....

METALS, JUNE, 1957

Canadian Copper Exports

(Dominion Bureau of Statistics)

(In tons of 2,000 lbs.)

	1957		
	Jan.	Feb.	Mar.
Ore, matte, regulus, etc. (content)	2,775	2,738	3,997
United States	1,401	2,296	2,254
Belgium	24	...	...
Germany (W.)	30	...	...
Netherlands	58	...	...
Norway	1,201	331	1,710
U. Kingdom	61	111	33
Ingots, bars, billets, anodes	20,582	16,272	14,720
United States	8,211	8,142	7,496
Brazil	364	...	88
Denmark	1	...	...
France	698	954	656
Switzerland	481	...	56
U. Kingdom	8,888	6,980	6,002
Australia	560	...	...
India	1,370	196	196
Other countries	6	...	2
Sweden	3	...	224

Total Exports:

Crude & refined	23,357	19,010	18,717
Old and scrap	1,736	940	995
Rods, strips, sheet & tubing	1,034	441	1,330

Canadian Zinc Exports

(Dominion Bureau of Statistics)

(In tons of 2,000 lbs.)

	1957		
	Jan.	Feb.	Mar.
Ore (zinc content)	13,883	10,661	10,555
United States	9,307	10,661	10,555
France	546	...	...
U. Kingdom	4,030	...	...
Slab zinc	19,304	16,618	14,923
United States	10,286	12,670	8,400
Argentina	91	...	...
Italy	112	...	...
U. Kingdom	9,018	3,613	6,168
Korea	99	276	...
Taiwan .....	...	23	...
Other countries	33	...	...
Netherlands .....	...	56	...
Total Exports:			
Ore and slabs	33,187	27,279	25,478
Zinc scrap			
dross, ashes	1,260	483	35
United States	51	95	...
Belgium	135	35	...
Germany (W.)	31	90	...
Netherlands	1,025	130	...
Japan	153	33	...

Canadian Lead Exports

(Dominion Bureau of Statistics)

(In tons of 2,000 lbs.)

	1957		
	Jan.	Feb.	Mar.
Ore (lead content)	3,194	1,773	2,220
United States	1,798	1,773	2,220
Belgium	620	...	...
Germany (W.)	776	...	...
Refined lead	8,946	6,632	7,044
United States	847	3,778	2,690
Brazil	111	108	...
U. Kingdom	5,320	2,352	2,128
Japan	2,627	358	2,051
Taiwan .....	...	36	62
Other countries	41	...	1
Germany (W.) .....	...	...	112
Total Exports:			
Ore & refined	12,140	8,405	9,264
Pipe and tubing .....	...	1	1
Lead scrap	46	...	1

Copper Imports and Exports By Principal Countries

(A. B. M. S.)

Reported in ingots, slabs, etc.; metric tons except where otherwise noted.

IMPORTS			
	1957		
	Jan.	Feb.	Mar.
U. S. (blister, s.t.)	32,494	18,217	29,081
(ore, etc., s.t.)	12,169	10,131	9,737
(ref., s.t.)	13,496	14,190	16,155
Denmark	551	422	150
France (crude)	813	1	...
(refined)	13,614	15,498	13,907
Italy	10,674	...	...
Netherlands	2,599	1,410	...
Norway	659	805	...
Sweden	3,529	3,136	...
Switzerland	4,812	3,843	3,189
U. K. (l.t.)	43,146	34,635	39,177
India (blister/- ref., l.t.)*	4,777	3,163	...
Australia (blister & ref., l.t.)*	500	1,000	...
EXPORTS			
	1957		
	Jan.	Feb.	Mar.
U. S. (ore and unref., s.t.)	1,223	1,407	1,972
(ref., s.t.)	29,933	29,769	41,376
Canada			
(ref., s.t.)	20,582	16,272	14,720
Finland	2	103	271
Norway	1,146	894	...
Sweden	919	430	...
U. K. (l.t.)	5,408	3,716	4,766
No. Rhodesia (ref. & blister, l.t.)*	28,990	46,031	32,460

* Includes old.

* British Bureau of Non-Ferrous Metal Statistics.

U. K. Copper Imports

(British Bureau of Non-Ferrous Metal Statistics)

(In tons of 2,240 lbs.)

	1957		
	Feb.	Mar.	Apr.
(Gross Weight)			
Copper and copper alloys	34,635	39,177	39,944
U. of S. Africa	50	200	81
N. Rhodesia	12,048	18,418	18,204
Canada	7,400	6,109	6,751
Belgium	100	...	1
Germany (W.)	8	38	11
Norway	150	151	125
United States	5,336	6,348	8,197
Chile	9,258	7,600	5,550
Peru .....	...	235	...
Turkey .....	...	492	...
Belg. Congo	250	296	250
Other countries	35	17	47
Of which:			
Electrolytic	24,613	22,145	25,897
Other refined	2,800	7,500	3,775
Blister or rough	7,178	9,433	10,213
Wrought and alloys	44	99	59
Total	34,635	39,177	39,944

Canada's Nickel Exports

(Dominion Bureau of Statistics)

(Refined, in oxides, matte, etc.)

	1957		
	1955	1956	1957
January	14,421	15,121	14,260
February	13,915	13,940	9,974
March	13,564	16,219	...
April	16,083	14,448	...
May	14,761	14,729	...
June	16,296	16,403	...
July	13,929	11,079	...
August	14,861	18,470	...
September	14,638	13,849	...
October	13,589	12,800	...
November	13,073	14,084	...
December	14,749	15,694	...
Year	173,879	176,837	...

French Copper Imports

(A.B.M.S.)
(In metric tons)

	1957		
	Feb.	Mar.	Apr.
Crude copper for refining (blister, black and cement)	1	...	813
U. Kingdom	1	...	...
Belg. Congo .....	...	...	813
Refined	15,498	13,907	17,352
United States	3,912	2,236	5,883
Canada	708	1,136	457
Chile	2,753	...	314
Belgium	3,902	3,955	4,912
Germany (W.)	511	724	511
Norway	203	102	254
Sweden .....	...	102	...
U. Kingdom	143	701	539
Belg. Congo	1,768	3,768	2,536
Rhodesia-Nyasaland	1,598	1,183	1,795
Other countries .....	...	...	151

French Zinc Imports

(A.B.M.S.)
(In metric tons)

	1957		
	Feb.	Mar.	Apr.
Ore (gross weight)	21,633	24,916	26,352
Peru .....	...	3,969	6,127
Greece	241	3,407	2,176
Italy	1,829	...	583
Norway .....	...	961	...
Portugal	208	...	...
Spain	6,236	3,489	...
Sweden	1,006	...	...
Yugoslavia	2,130	2,050	...
Algeria .....	...	344	4,541
Morocco	6,872	9,009	8,494
Tunisia .....	...	...	1,645
Belg. Congo	3,111	...	...
Australia .....	...	1,687	3,786
Slabs, bars, blocks, etc.	579	1,071	1,392
Belgium	479	996	975
Germany (W.)	100	...	275
Italy .....	...	50	66
Norway .....	...	25	50
Russia .....	...	...	26

French Metal Exports

(A.B.M.S.)
(In metric tons)

	1957		
	Feb.	Mar.	Apr.
LEAD			
Ore (gross weight)	5	736	294
Pig lead	20	518	272
Switzerland	20	515	255
Other countries .....	...	3	17
Antimonial lead	29	33	33
ZINC			
Slabs, bars, blocks, etc.	2	51	...

IT PAYS
to
ADVERTISE
in the
DAILY METAL REPORTER

Nonferrous Castings

MONTHLY SHIPMENTS, BY TYPE OF METAL (Bureau of Census — Thousands of Pounds)

	Alu- minum	Copper	Mag- nesium	Zinc	Lead Die
1951 Total	515,131	1,197,443	30,825	487,996	25,936
1952 Total	518,979	1,009,910	34,857	408,353	20,941
1953 Total	658,022	990,496	34,517	521,253	20,444
1954 Total	607,764	834,557	25,572	474,741	18,396
1955					
November	75,065	90,345	2,325	75,099	1,896
December	75,275	88,287	2,255	70,950	1,817
Total	833,058	1,011,748	27,892	781,254	21,045
1956					
January	74,152	89,767	2,959	68,050	1,598
February	73,096	91,706	2,977	66,584	1,636
March	73,785	96,085	3,046	65,760	1,644
April	67,880	90,679	3,140	58,274	1,910
May	65,786	89,188	3,021	52,205	1,919
June	58,189	78,921	2,949	47,775	1,883
July	52,955	60,926	2,810	42,227	1,551
August	61,507	77,619	3,059	52,321	2,112
September	62,503	72,109	3,079	46,340	1,004
October	74,209	81,049	3,442	65,450	2,206
November	69,741	72,866	2,892	64,972	1,788
December	67,333	65,198	2,794	58,111	1,483
Total	801,136	966,473	36,168	88,069	20,734
1957					
January	72,999	82,025	3,207	67,964	1,883
February	69,651	72,084	2,661	59,793	1,435
March	74,527	77,418	2,970	61,378	1,865

Copper Castings Shipments

BY TYPE OF CASTING (Bureau of Census) (Thousands of Pounds)

	Total	Sand	Mold	Die	All Other
1951 Total	1,197,443	1,075,437	69,883	12,516	39,607
1952 Total	1,009,910	910,862	63,865	8,259	26,924
1953 Total	990,496	888,369	61,316	10,077	30,734
1954 Total	834,557	751,804	48,849	6,480	27,394
1955					
October	91,192	82,958	4,513	727	2,994
November	90,345	80,934	5,807	743	2,861
December	88,287	78,327	6,368	713	2,879
Total	1,011,748	907,852	63,041	8,541	31,408
1956					
January	89,767	80,116	6,135	799	2,717
February	91,706	82,244	5,888	727	2,847
March	96,085	85,894	6,299	782	3,110
April	90,679	81,333	5,835	722	2,789
May	89,188	80,155	5,398	751	2,854
June	78,921	70,260	5,052	755	2,854
July	60,926	55,027	3,193	506	2,290
August	77,619	70,479	3,805	904	2,431
September	72,109	64,887	3,930	929	2,363
October	81,049	73,058	4,104	1,120	2,767
November	72,866	65,022	4,114	1,057	2,673
December	65,198	57,929	3,769	971	2,529
Total	966,113	866,404	57,522	10,023	32,134
1957					
January	82,025	73,702	4,510	1,008	2,805
February	72,084	64,346	4,188	874	2,676
March	77,418	69,258	4,445	878	2,837

Nickel Averages

Electro, cathode sheets, 99.00%,
f.o.b. refinery, duty included
(Cents per pound)

	1954	1955	1956	1957
Jan.	60.00	64.50	64.50	74.00
Feb.	60.00	64.50	64.50	74.00
Mar.	60.00	64.50	64.50	74.00
Apr.	60.00	64.50	64.50	74.00
May	60.00	64.50	64.50	74.00
June	60.00	64.50	64.50	....
July	60.00	64.50	64.50	....
Aug.	60.00	64.50	64.50	....
Sept.	60.00	64.50	64.50	....
Oct.	60.00	64.50	64.50	....
Nov.	60.98	64.50	64.50	....
Dec.	64.50	64.50	72.48	....
Av.	60.46	64.50	65.165	....

Platinum Averages

N. Y. MONTHLY QUOTATIONS
(Dollars per Troy Ounce)

	1954	1955	1956	1957
Jan.	91.40	81.00	106.30	101.92
Feb.	91.00	78.16	104.34	98.59
Mar.	87.88	78.00	104.23	93.50
Apr.	85.50	77.94	103.92	93.45
May	85.50	77.50	105.23	92.865
June	85.50	78.33	106.50	....
July	85.50	81.78	106.50	....
Aug.	85.00	84.59	105.76	....
Sept.	85.50	91.96	105.50	....
Oct.	83.62	94.60	104.85	....
Nov.	81.07	103.11	104.50	....
Dec.	80.64	106.58	104.50	....
Av.	85.72	86.12	105.18	....

Spot Straits Tin

(Straits, Open Market, N. Y.)

	Monthly Average Prices			
	1954	1955	1956	1957
Jan.	85.125	87.268	105.036	101.511
Feb.	85.16	90.836	100.803	101.132
Mar.	92.457	91.161	100.786	99.643
Apr.	96.298	91.48	99.268	99.304
May	93.51	91.41	96.994	98.347
June	94.24	93.68	94.589	....
July	96.55	97.08	96.143	....
Aug.	93.381	96.521	99.049	....
Sept.	93.536	96.607	103.809	....
Oct.	93.225	96.20	106.023	....
Nov.	91.176	97.987	110.921	....
Dec.	88.571	108.02	104.268	....
Aver.	91.935	94.85	101.474	....

Prompt Tin Prices

(Straits, Open Market, N. Y.)

	Monthly Average Prices (Cents per pound)			
	1954	1955	1956	1957
Jan.	84.84	87.628	104.768	101.347
Feb.	85.04	90.75	100.586	100.257
Mar.	91.24	91.065	100.524	99.476
Apr.	96.238	91.41	99.145	99.286
May	93.51	91.38	96.853	98.335
June	94.24	93.64	94.488	....
July	96.55	96.825	96.131	....
Aug.	93.381	96.456	98.924	....
Sept.	93.536	96.256	103.559	....
Oct.	93.00	96.075	105.716	....
Nov.	91.099	97.882	110.329	....
Dec.	88.571	107.75	104.00	....
Av.	91.77	94.73	101.252	....

Quicksilver Averages

N. Y. Monthly Averages

Virgin, Dollars per 76-lb. Flask

	1954	1955	1956	1957
Jan.	189.60	324.68	277.88	256.00
Feb.	190.00	324.68	270.29	256.00
Mar.	201.63	322.61	261.40	256.00
Apr.	221.36	318.14	267.22	256.00
May	251.20	306.62	267.675	256.00
June	273.46	286.98	260.69	....
July	287.40	268.22	256.06	....
Aug.	290.71	255.18	256.00	....
Sept.	314.08	263.70	256.00	....
Oct.	329.50	279.02	255.92	....
Nov.	321.17	282.50	255.13	....
Dec.	319.96	282.27	256.00	....
Av.	265.84	292.90	261.71	....

METALS, JUNE, 1957

Primary Aluminum Output, Shipments and Stocks

(U. S. Department of Interior)

	Stocks beginning of month short tons	Production short tons	—Sold or Used— Short tons	Value f. o. b. plant	Stocks end of month short tons
1956					
July	17,399	151,624	134,089	64,858,158	34,925
August	34,925	92,406	90,614	44,519,556	36,717
September	36,717	132,316	121,854	60,104,570	47,179
October	47,179	149,125	134,014	67,126,363	62,290
November	62,290	145,081	119,787	60,252,640	87,584
December	87,584	148,391	133,186	67,039,743	102,789
Total		1,679,247	1,591,478		
1957					
January	102,496	147,029	104,394	52,418,766	145,131
February	145,131	119,059	97,886	49,173,176	166,324
March	166,324	135,706	141,529	71,240,311	160,501

Aluminum Wrought Products

PRODUCERS' MONTHLY NET SHIPMENTS

(Bureau of Census — Thousands of Pounds)

	Total	Plate, Sheet, & Strip	Rolled Structural Shapes, Rod, Bar & Wire	Extruded Shapes Tube Blooms & Tubing	Powder, Flake, & Paste
1954 Total	2,088,439	1,165,090	357,229	518,070	46,255
1955					
September	244,135	134,240	32,973	67,407	2,926
October	248,806	138,328	30,554	71,456	2,926
November	245,526	137,109	31,656	67,798	2,658
December	242,993	138,592	31,802	64,159	1,837
Total	2,805,500	1,542,368	365,391	812,311	35,854
1956					
January	251,639	142,049	34,008	67,499	2,118
February	240,999	134,077	33,727	65,261	1,901
March	232,767	128,432	30,972	63,482	1,947
April	260,610	143,859	37,971	69,639	3,316
May	264,378	147,613	39,900	68,106	2,215
June	240,415	132,510	33,438	65,600	2,119
July	247,895	139,571	35,346	64,249	2,736
August	248,457	141,400	32,413	66,315	3,039
September	217,425	117,074	32,154	59,462	2,953
October	252,289	136,546	25,385	73,363	2,255
November	218,272	114,618	31,501	64,197	1,716
December	194,822	99,851	31,787	55,225	1,702
Total	2,870,101	1,577,601	398,602	782,398	28,017
1957					
January	234,805	126,008	35,911	64,227	1,970
February	206,397	109,786	30,330	58,296	1,927
March	229,786	120,077	34,365	66,400	2,190
April	238,189	126,754	34,805	68,261	2,572

Aluminum Castings Shipments

(Bureau of Census)

BY TYPE OF CASTING

	(Thousands of Pounds) Total	Sand	Permanent Mold	Die	All Other
1951 Total	515,131	193,378	160,011	151,465	10,277
1952 Total	518,979	194,616	146,883	169,732	7,748
1953 Total	658,022	214,553	200,025	239,330	4,114
1954 Total	609,066	155,738	213,968	232,726	6,800
1955					
October	72,197	14,485	25,135	31,741	836
November	75,065	14,327	26,267	33,852	619
December	75,275	15,291	25,031	34,347	606
1955 Total	833,058	171,757	298,115	354,804	8,282
1956					
January	74,152	15,861	24,528	33,253	510
February	73,096	15,560	23,963	32,949	624
March	73,785	16,597	22,816	33,965	407
April	67,880	14,732	20,718	31,782	648
May	65,786	15,600	19,669	29,814	703
June	58,189	13,448	19,067	25,027	647
July	52,955	12,398	16,388	23,491	678
August	61,407	13,100	18,067	29,553	687
September	62,503	12,354	17,855	31,640	654
October	74,209	14,389	21,120	37,782	918
November	69,741	14,333	20,673	33,929	806
December	67,333	13,391	20,557	32,923	454
1956 Total	801,036	171,763	245,421	376,108	7,736
1957					
January	72,999	14,201	20,963	37,194	641
February	69,451	13,366	21,707	34,311	67
March	74,527	13,914	22,974	37,521	118

Virgin Aluminum

Virgin 99% Delivered
Monthly Average Prices
(Cents per pound)

	1954	1955	1956	1957
Jan.	21.50	22.90	24.40	27.10
Feb.	21.50	23.20	24.40	27.10
Mar.	21.50	23.20	24.60	27.10
Apr.	21.50	23.20	25.90	27.10
May	21.50	23.20	25.90	27.10
June	21.50	23.20	25.90	....
July	21.50	23.20	25.90	....
Aug.	22.12	24.26	26.70	....
Sept.	22.20	24.40	27.10	....
Oct.	22.20	24.40	27.10	....
Nov.	22.20	24.40	27.10	....
Dec.	22.20	24.40	27.10	....
Av.	21.785	23.655	26.008	....

Magnesium Wrought Products Shipments

(Bureau of Census)

(Thousands of Pounds)

	1954	1955	1956	1957
Jan.	972	1,776	2,188	1,065
Feb.	1,136	1,648	1,901	1,261
Mar.	1,136	1,947	1,946	1,194
Apr.	892	1,756	2,279	....
May	1,129	1,836	2,462	....
June	1,312	1,686	2,302	....
July	1,032	1,437	2,002	....
Aug.	1,111	1,742	2,523	....
Sept.	1,183	2,159	1,988	....
Oct.	1,002	1,667	861	....
Nov.	1,243	1,954	2,141	....
Dec.	1,673	1,577	2,452	....
Total	13,743	21,186	24,975	....

Cadmium Averages

N. Y. Monthly Averages

Cents per lb. in ton lots

	1954	1955	1956	1957
Jan.	200.00	170.00	170.00	170.00
Feb.	170.00	170.00	170.00	170.00
Mar.	170.00	170.00	170.00	170.00
Apr.	170.00	170.00	170.00	170.00
May	170.00	170.00	170.00	170.00
June	170.00	170.00	170.00	....
July	170.00	170.00	170.00	....
Aug.	170.00	170.00	170.00	....
Sept.	170.00	170.00	170.00	....
Oct.	170.00	170.00	170.00	....
Nov.	170.00	170.00	170.00	....
Dec.	170.00	170.00	170.00	....
Av.	172.50	170.00	170.00	....

Steel Ingot Production

(American Iron and Steel Institute)

Period	Estimated		Production —		All Companies		ELECTRIC		TOTAL		weekly production, all companies (net tons)
	OPEN HEARTH	BESSEMER	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent			
	Net tons of	Net tons of	capacity	capacity	Net tons of	Net tons of	capacity	capacity	Net tons of	capacity	
1952 Total	82,846,439	87.2	3,523,677	65.5	6,797,923	82.6	93,168,039	85.8	1,782,097		
1953 Total	100,473,823	97.9	3,855,705	83.2	7,280,191	71.1	111,609,719	94.9	2,140,578		
1954 Total	80,327,494	73.6	2,548,104	68.2	5,436,054	62.0	88,311,652	71.0	1,693,741		
1955 Total	105,342,886	95.6	3,319,088	69.3	8,338,592	77.2	117,000,566	93.0	2,243,969		
1956											
February	9,048,064	101.3	296,543	78.0	779,388	87.1	10,118,995	99.2	2,444,202		
March	9,793,263	102.7	310,060	76.3	819,465	85.7	10,924,788	100.2	2,466,092		
April	9,437,945	102.2	306,388	77.9	779,451	84.2	10,523,785	99.7	2,453,097		
May	9,370,167	98.2	297,990	73.3	822,219	86.0	10,490,376	96.2	2,339,097		
June	8,666,044	93.9	282,846	71.9	778,546	83.6	9,721,343	92.2	2,068,059		
July	1,830,151	13.9			292,012	30.5	1,622,163	14.9	867,005		
August	7,213,274	75.6	189,564	46.6	719,759	73.3	8,122,597	74.3	1,833,551		
September	9,343,796	101.2	286,978	72.9	792,885	83.7	10,422,659	98.8	2,435,201		
October	9,841,002	103.2	330,101	81.2	877,410	91.8	11,048,513	101.3	2,575,450		
November	9,430,248	102.2	295,827	72.5	829,925	89.6	10,555,500	100.0	2,460,490		
December	9,695,919	101.6	308,465	75.9	833,161	87.1	10,837,545	99.4	2,541,933		
Total	102,840,585	91.6	3,227,997	67.4	9,147,567	81.2	115,216,149	89.8	2,203,828		
1957											
January	9,829,691	99.0	294,839	77.1	884,232	86.5	11,008,762	97.1	2,485,048		
February	8,898,671	99.2	277,682	80.4	810,853	87.8	9,987,206	87.6	2,496,801		
March	9,442,164	95.1	275,156	71.0	871,734	85.2	10,589,074	93.4	2,390,310		
April	8,820,328	91.8	231,731	62.6	762,721	77.1	9,814,780	89.5	2,287,828		
May	8,837,003	89.0	202,000	52.8	769,003	75.2	9,838,020	86.5	2,214,305		

Steel Ingot Operations

(Percentage of Capacity as Reported by American Iron & Steel Institute)

Week	Beginning	1954	1955	1956	1957
Jan. 7...	75.4	81.2	97.6	98.4	
Jan. 14...	74.3	83.2	98.6	96.4	
Jan. 21...	74.1	83.2	99.0	96.6	
Jan. 28...	75.6	85.0	100.4	97.6	
Feb. 4...	74.4	85.4	99.3	97.1	
Feb. 11...	74.4	86.8	99.1	97.7	
Feb. 18...	74.6	89.1	98.8	97.8	
Feb. 25...	73.6	90.8	98.8	96.0	
Mar. 4...	70.7	91.9	99.9	94.2	
Mar. 11...	69.3	92.9	100.0	93.8	
Mar. 18...	67.6	94.2	100.6	93.5	
Mar. 25...	68.1	93.7	99.5	92.4	
Apr. 1...	69.1	94.4	99.6	90.6	
Apr. 8...	68.0	95.3	97.7	90.3	
Apr. 15...	68.0	94.6	100.9	90.4	
Apr. 22...	68.6	94.6	100.2	88.7	
Apr. 29...	68.7	95.6	100.5	87.0	
May 6...	69.4	96.6	96.4	86.7	
May 13...	70.9	97.2	95.2	84.2	
May 20...	71.8	96.9	95.3	86.4	
May 27...	71.2	96.4	97.3	88.0	
June 3...	70.2	95.8	96.3	87.5	
June 10...	73.2	94.7	96.7	86.5	
June 17...	72.3	96.0	93.4	87.5	
June 24...	72.1	95.0	93.0		
July 1...	65.8	71.1	84.9		
July 8...	60.0	85.9	12.3		
July 15...	64.3	91.2	12.9		
July 22...	65.3	91.0	14.6		
July 29...	64.2	90.7	17.0		
Aug. 5...	64.0	86.9	16.9		
Aug. 12...	64.0	89.4	57.5		
Aug. 19...	61.8	90.2	87.5		
Aug. 26...	63.5	90.6	95.8		
Sept. 2...	64.0	93.4	97.0		
Sept. 9...	63.0	93.8	98.7		
Sept. 16...	66.3	95.7	100.6		
Sept. 23...	68.7	96.1	100.6		
Sept. 30...	70.4	97.0	101.6		
Oct. 7...	71.0	96.7	101.8		
Oct. 14...	72.8	96.5	100.9		
Oct. 21...	73.6	98.9	101.4		
Oct. 28...	74.5	100.0	101.2		
Nov. 4...	76.4	99.4	101.3		
Nov. 11...	77.2	99.6	100.6		
Nov. 18...	79.3	99.2	100.2		
Nov. 25...	80.3	100.1	100.1		
Dec. 2...	81.4	97.6	101.1		
Dec. 9...	82.5	100.1	101.3		
Dec. 16...	81.5	100.3	102.0		
Dec. 23...	72.4	96.9	94.3		
Dec. 30...	77.6	95.7	97.3		

Blast Furnace Output

(American Iron and Steel Institute)

Period	net tons		% Capacity
	Pig Iron	Ferro-manganese & Spiegeleisen	
1947			
Ttl. Yr.	58,507,169	702,561	59,209,730
1948			
Ttl. Yr.	60,135,941	712,899	60,848,840
1949			
Ttl. Yr.	53,613,779	592,564	54,206,343
1950			
Ttl. Yr.	64,810,272	678,896	65,489,168
1951			
Ttl. Yr.	70,487,380	745,381	71,232,761
1952			
Ttl. Yr.	61,528,665	629,926	62,158,591
1953			
Total	74,987,721	855,038	75,842,759
1954			
Total	58,119,952	568,785	58,688,737
1955			
Jan.	5,729,404	55,249	5,784,653
Feb.	5,394,585	48,182	5,442,767
Mar.	6,405,902	57,049	6,462,951
Apr.	6,829,927	64,712	6,894,639
May	6,758,286	61,699	6,820,985
June	6,495,050	48,735	6,543,785
July	6,329,393	61,166	6,390,559
Aug.	6,529,580	71,902	6,601,482
Sept.	6,652,878	49,788	6,702,666
Oct.	6,905,220	59,993	6,965,213
Nov.	6,686,649	62,341	6,748,990
Dec.	6,887,667	65,849	6,953,516
Total	77,114,073	868,758	77,982,831
1956			
Jan.	6,985,945	63,619	7,049,564
Feb.	6,539,199	63,618	6,602,817
Mar.	7,083,877	65,568	7,149,445
Apr.	6,866,583	68,740	6,935,323
May	6,979,102	47,840	7,026,942
June	6,887,608	46,981	6,934,589
July	1,089,518	17,491	1,107,009
Aug.	5,100,669	41,548	5,142,217
Sept.	6,873,064	59,584	6,932,648
Oct.	7,245,650	69,909	7,315,559
Nov.	6,977,457	58,614	7,036,071
Dec.	7,268,743	65,841	7,334,584
Total	75,301,134	664,341	75,965,475
1957			
Jan.	7,209,547	72,826	7,282,373
Feb.	6,596,133	61,973	6,658,106
Mar.	7,179,100	67,779	7,246,879
Apr.	6,810,102	60,784	6,870,886

Steel Castings Shipments

(Bureau of Census)

Period	(Short Tons)		For Own Use
	Total	For Sale	
1950	1,461,667	929,192	374,217
1951	2,101,604	1,507,413	594,191
1952	1,925,116	1,476,352	448,767
1953	1,829,277	1,290,016	431,330
1954			
Total	1,184,096	880,158	303,938
1955			
Jan.	98,238	75,044	23,194
Feb.	106,430	80,729	25,701
Mar.	127,460	98,926	28,534
Apr.	120,053	92,237	27,816
May	122,465	92,713	29,752
June	133,887	102,457	31,430
July	97,875	71,170	26,705
Aug.	126,406	96,290	30,116
Sept.	140,843	107,622	33,221
Oct.	145,674	110,409	35,265
Nov.	152,381	116,908	35,473
Dec.	158,982	122,201	36,781
Total	1,530,694	1,166,706	363,988
1956			
Jan.	158,618	123,343	35,275
Feb.	165,398	128,598	36,800
Mar.	170,045	130,839	39,206
Apr.	163,708	125,015	38,693
May	178,227	142,025	36,202
June	164,661	129,147	35,514
July	117,984	96,350	21,634
Aug.	159,831	127,001	32,830
Sept.	155,046	121,705	33,341
Oct.	175,630	135,798	39,832
Nov.	164,114	126,900	37,214
Dec.	158,725	125,569	33,156
Total	1,931,987	1,512,290	416,697
1957			
Jan.	169,240	133,826	35,414
Feb.	154,932	121,667	33,265
Mar.	160,054	124,416	35,638

GALVANIZED SHEET SHIPMENTS

(American Iron & Steel Institute)

Period	(Net Tons)	
	1954	1955
Jan.	169,086	211,101
Feb.	167,433	199,408
Mar.	180,198	238,649
Apr.	203,312	239,001
May	201,671	235,962
June	200,456	246,940
July	214,349	205,211
Aug.	207,113	241,863
Sept.	209,765	269,020
Oct.	209,498	260,010
Nov.	195,190	255,692
Dec.	205,561	261,640
Total	2,362,632	2,864,497

* Combined with August figures.

SHIPMENTS OF TIN-TERNE PLATE

(American Iron & Steel Institute)

Period	(Net Tons)	
	Hot Dipped	Electrolytic
Jan.	81,634	88,174
Feb.	77,877	63,040
Mar.	133,257	113,593
Apr.	138,556	130,037
May	70,282	354,204
June	84,371	466,060
July		
Aug.	81,005	408,903
Sept.	72,400	396,588
Oct.	92,394	415,451
Nov.	70,510	325,408
Dec.	68,385	288,896
Total	950,070	4,615,068

* Combined with August figures.

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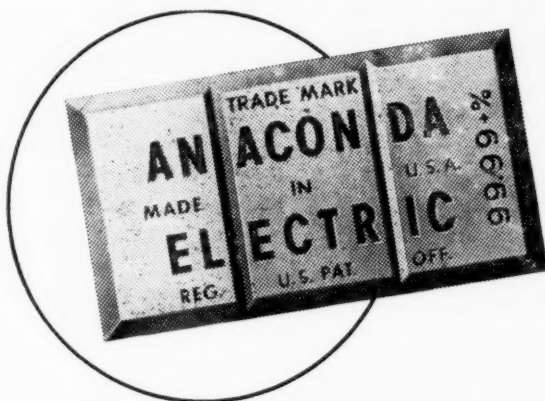
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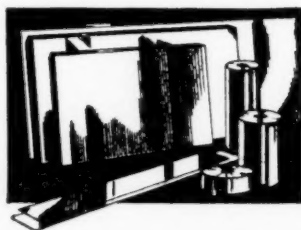
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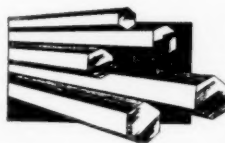
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